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The AMERICAN RIFLEMAN

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20 cents the copy

And they all shot Remington!

(*at Lima, Peru*)

We are told that practically all of the winners in the Pan-American Rifle Matches at Lima, Peru, November 14 to 30, shot Remington Palma-Olympic International Match Ammunition—the famous 180-grain bullet which has set a new standard of accuracy for military and match rifle shooting throughout the world. Certain it is that all of the countries competing selected Remington ammunition for their teams.

A review of the results shows that the American representatives took the major portion of the events, including the two big team matches. The Cuban marksmen, however, equipped with the same rifles and ammunition as used by the American team proved worthy and formidable opponents throughout the contests, taking second place in each of the team matches and winning the Individual Standing Championship.

Morris Fisher and Sydney Hinds were easily the star performers, while Armand Morgan displayed unusual ability in the standing position. The American team was well balanced and shot consistently.

Following is a summary of the winners:

Argentine Trophy Match
(300 Meters)

		Scores
1.	United States	5123
2.	Cuba	5038
3.	Argentina	4934
4.	Peru	4788

Team Match
(400, 500, 600 Meters)

		Score
1.	United States	1331
2.	Cuba	1327
3.	Peru	1289
4.	Argentina	1278

Position Championships
(40 Shots, each Position)

Standing	Score	Kneeling	Score	Prone	Score
1. Miguel Navarro, Cuba	330	1. Sydney Hinds, U. S.	351	1. Sydney Hinds, U. S.	370
2. Armand Morgan, U. S.	327	2. Morris Fisher, U. S.	350	2. Morris Fisher	370
3. Juan Martino, Arg.	324	3. Jose F. Guido, Arg.	350	3. R. E. Coulter	370

Unlimited Reentry
(300 Meters, 3 Positions)

		Score
1.	Juan Martino, Arg.	286
2.	Sydney Hinds, U. S.	286
3.	Abelardo Rico, Arg.	285

Limited Reentry
(300 Meters Prone)

		Score
1.	George Rehm, U. S.	194
2.	Stephen Monahan, U.S.	193
3.	Calvin Lloyd, U. S.	188

Visitor's Cup Match
Unlimited Reentry (300 Meters)

		Score
1.	Morris Fisher, U. S.	282
2.	R. E. Coulter, U. S.	279
3.	E. C. Crossman, U. S.	279

Individual Champion		Score
1.	Lt. Sydney R. Hinds, U. S.	1034

Carton Match		Score
1.	George Rehm, U. S.	933

The Revolver Team Match was won by Argentina, shooting Remington Cartridges. To all the competitors and prize winners, we extend hearty congratulations for the excellent scores made.

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The AMERICAN RIFLEMAN

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Looking Ahead

By C. B. Lister

TODAY the American shooting fraternity is embarking on what promises to be the most momentous year in the history of the shooting game in the United States.

The riflemen, as holders of every international rifle shooting title worthy of the name, will be called on to defend their reputations as the world's leaders with the small bore rifle in the Dewar Cup Match, with the free rifle in the International Free Rifle Competitions, with the military rifle in the Palma Trophy Match, and in the Pan-American events.

The shooters of the nation—rifle, pistol and shotgun men—face the problems of restrictory and confiscatory legislation in forty-five state legislatures which convene during the year, as well as in the Congress of the United States, in which latter body bills looking toward restriction in the transportation of firearms *of all descriptions* have already been introduced. The rifleman and shotgun shooters have, in addition, the question of various game and game bird conservation, propagation, and shooting preserve schemes.

As the sole national shooting organization backed by official recognition, the National Rifle Association will be in the forefront of all of these activities with the exception of the game protective and propagation plans, which are watched over by other organizations having made a close study of the wild game situation in this country.

As the official organ of the N. R. A., THE AMERICAN RIFLEMAN will assume a position of importance to the shooters of the United States greater than it has ever occupied before, and second to no other magazine of any description.

The legislative problem will be the first to be faced. The N. R. A. has never attempted to assume a dictatorial attitude toward legislators, nor to combat regulatory firearms legislation. It has consistently adopted an advisory attitude, and realizing that some kind of legislation is bound to be placed on the statute books because of reform clamor, has assisted in the framing of sensible regulatory bills which will go as far as any mere legislation can go in the curbing of the criminal element in their efforts to obtain firearms without depriving honest citizens of their constitutional rights to possess and learn how to shoot those weapons necessary for the defense of their homes and for the defense of the nation. Sensible regulatory legislation, whether state or national, has the full sanction and approval of the N. R. A. Unwisely drawn statutes of a confiscatory nature have the unequivocal opposition of the Association.

In the arming and training of our international rifle teams the same principles of selecting a team as nearly as possible representative of the entire shooting strength of the nation, equipping them with the best arms and ammunition possible to develop and purchase, and of sending them abroad adequately financed, which have been so successfully followed in the past few years will still be maintained.

With the reopening of the Pan-American Shooting Union program this year, another international obligation has been laid on the National Rifle Association. From the results of the matches at Lima, it is apparent that the Pan-American Matches of 1925, which will be held at Havana, will be probably the most keenly contested of the 1925 international events. The N. R. A. strongly endorses the Pan-American events and will do everything possible during the coming year to forward the program of annual matches between the nations of North and South America.

The British Team in the 1924 Dewar Match showed the results of more careful selection, coaching, and better team work by producing a new record score which it was necessary for our team to strain every effort to beat.

With the steady growth of interest in .22 caliber rifle shooting in this country and the continual development of .22 caliber rifles, ammunition and marksmen, there is no reason why our team in 1925 should not be able to surpass the splendid team score turned in by the 1924 squad. Nor is there any good reason to believe that the British Team will not also surpass that score, so that the civilian rifle clubs throughout the country must bend every effort between now and September to the development of small bore competition shots of the highest caliber. Having developed such shooters, vacations and finances must be so arranged as to see that the men who carry the Red, White and Blue Shield in the 1925 international small bore classic are representative of the best that the nation can produce. If this end can be attained, there is no doubt but what the Dewar Cup will remain in this country. If it fails of attainment, it is highly probable that it will be sent back to London for the first time in six years.

There are many improvements to be made in the armament of our international free rifle team if it is to retain the title of the International Shooting Union for the United States. Each year, the ammunition selected seems to have reached the acme of perfection, but each succeeding year some- *(Continued on page 15)*

Jinx

By Donald Baker

SEVERAL months ago, to be exact last June, a certain tall, skinny, but withal good-looking young man was all set to clean up everything in sight at Sea Girt, but come July 4th and after when the smoke of battle had cleared away and we were able to read the records of past events it appeared that said young man had evidently been chased off the range by our old friend, the *Jinx*. The funny little chap that likes to play practical jokes on all of us at odd and sundry times. The little guy who seldom bothers us much during practice but let a nice match come along that we have set our heart on capturing and he'll (note spelling) be right there with bells on. He seldom appears twice alike but one never has any trouble in recognizing the bird.

Which reminds me that someday, I want someone to help me design a suitable medal for presentation at Sea Girt and Camp Perry, or any other old place. Said medal to show a troup of Jinx strewing roses in the path of a Small Bore Crank, targets in the distance and in the foreground a scoreboard with one of those nice *possible plus* scores.

Such a medal should be presented to any and all shooters who could conscientiously say they had come through clean without once having been bothered by the little fellow in either one form or another.

And speaking of the family of Jinx, one of the greatest of these is leading, the little devil who crops up either at the beginning, the end, or all through what might otherwise be a d—n good score.

In my opinion, leading can come but from one source, and that is a rough spot somewhere in the bore or the land. It may be a sharp corner at the beginning of the rifling, it may be tool marks, or it may be from the effects of corrosion. I recently shot a new rifle that was fresh from the factory and was supposed to be super accurate. A half dozen shots convinced me that something was not as it should be. On cleaning I found plain evidence of leading. More shooting and continued cleaning seemed to improve matters somewhat. Finally, however, I applied a quantity of rouge and oil to a brass bristle brush and carefully scrubbed the barrel with it using about ten minutes of time. This cured the whole trouble, no further trouble being experienced from leading.

However, while the layman may in an emergency take a chance on lapping a barrel, my advice would be that if you have a barrel which has a bad habit of leading, send it back to the factory or to the gunsmith who made it and let them put it in shape. If it can be done, they have both the facilities and the necessary skill.

While tool marks frequently cause trouble, unquestionably the most common cause is the result of lack of proper care and attention to the detail of cleaning which has resulted in the corrosion of the bore of the barrel. The effects of this are sometimes invisible to the naked eye and a barrel may appear to be as bright and smooth as the day it was made, but nevertheless leading will appear after every string of shots.

While such barrels may sometimes be saved by proper mechanical methods, quite often they cannot, and so therefore it behooves us to use preventative methods, rather than corrective ones.

A great deal has been written from time to time on cleaning methods, but most of these methods have seemed to me rather elaborate and time-consuming. I am therefore suggesting the following method which I am using with entire success.

First, *scrub* bore with two patches moistened with water, follow with one dry patch, next moisten clean patch with *grain alcohol,* (don't use denatured as some kinds contain chemicals injurious to steel) scrub barrel with this patch. Then follow with one dry patch, then allow gun to stand about one minute and then *push through* a loose patch saturated with Hoppe's or other good gun oil or scrub with a soft bristle brush or wool mop filled with B. S. A. Safety paste.

In connection with the above secret of its effectiveness is that the water loosens up all powder and primer residue, the alcohol acts as a final cleaner, but its main purpose is to absorb all moistures. This it does because of its natural affinity for water. The dry patch then takes up the alcohol, or most of it while the balance rapidly evaporates leaving the bore clean and dry and in proper conditon to receive the protecting coat of oil or grease.

Jinx No. 2, an improperly stocked gun, is the most illusive Jinx of the bunch. He's usually the last one we look for sometimes the hardest to handle.

For the past few weeks I have been shooting a .22 Springfield. Sometimes, I seemed to get good results and at others I got results I could not account for, particularly as my cross hairs told me my holding was O. K. I thought it might be leading but after repeated cleanings with no sign of lead, changes in ammunition, etc., I have decided that leading was not a factor.

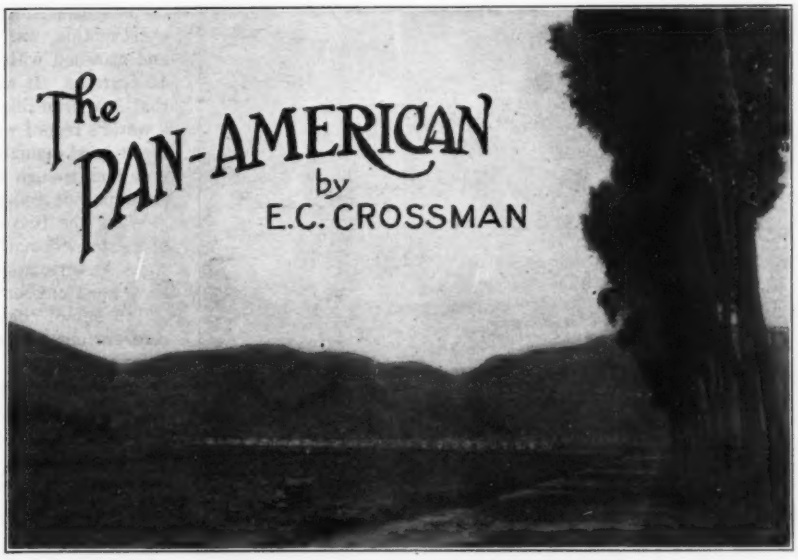
One night shooting at 25 yards indoor I got a V-10 then a 9 o'clock, 7 next, a 9 o'clock eight, then a 10th, next shots doubled with the former seven and eight. This looked like a last bold effort on the part of Mr. Jinx to attract attention, and I therefore proceeded to look for him with a screw driver and a monkey wrench. And I finally found the bird between the barrel and stock. Placing a piece of light weight cardboard between the fore-end (forward end) and the barrel, and then screwing the stock back into place. (Always be sure to set screws up as tight as possible) I went back on the range and made five consecutive five shot possibles after which I grins and winks at the Jinx. And the Jinx (he's a wise little guy) winks back.

Back in Brooklyn Len Miller and I used to do quite a lot of experimenting along various lines. And I think it was he that got the idea of relieving the stock around the barrel and having nothing in contact with it. I tried it, and also went so far as take the screw out which held the action to the stock, thus leaving the action and barrel free on top of the stock. The result of this was that I could shoot some remarkably close groups of from five to seven shots, but in any ten-shot group there were always sure to be some very bad flyers. So far as having no wood touch the barrel at any point I came to no final conclusions as I happened to run into a bad lot of ammunition at that time and it was some time later before I got another lot that would shoot in my 52. One thing was certain however and that is that stock and action must be firmly screwed together.

At Camp Perry this year I had occasion to fix up the trigger pull on the Winchester 52 with which McGarity made the world's record of 125 consecutive bull's-eyes at 200 yards and since I knew that this gun was delivering all that could be expected of any .22 I made it a point to slug the barrel and otherwise examine it. One thing I noted in particular was the way in which it was stocked. When the action and barrel were laid in the stock I noted that it touched only at the extreme ends, in other words the stock was very much concave and required quite a little tension being put on the screw in order to bring the stock up to its final bearing. This would indicate that the fore-end is exerting considerable upward pressure on the barrel at its extreme end. A consideration of this gun, the way it shot and the way it was stocked led me to try the experiment of the shim under the barrel of the Springfield.

A little later I hope to make some farther experiments along these lines, and also to try and determine the relative advantage or disadvantage of single piece stocks such as the Springfield and Winchester 52 as against guns fitted with fore-end and stock such as Ballard, B. S. A. and such guns. Personally I have an idea that the properly fitted single piece stock of the bolt action rifle has a decided advantage.

Speaking again on the subject of leading reminds me of a time when the Jinx trimmed me out of two perfectly good matches. We were shooting the Individual Palma at Sea Girt, and as all my friends know this is my particular dish, and having won the preliminary Palma I was sitting pretty. I came through the 150-yard stage clean, laid my gun down on the 175-yard line waiting for the other relays to clean up, a few minutes previous to starting this stage I picked up my rifle and noticed *(Continued on page 17)*



THE Argentine Cup emblematic of the Pan-American Team Championship, is on its way to the United States, an American trophy for the first time since 1913, when the Argentinos wrested it from our grip on our own home grounds.

It is accompanied: By the new cup, the Trophy of Peru, won by the United States Team after a bitter and close struggle with Cuba; by the Visitor's Cup, won by Sergeant Fisher; by the Master Rifleman's Medal; by first place in the limited entry prone match; by the gold medal for high man in the team match; and by the medals for the kneeling and prone positions.

The Yankee team overloked a few small items in Lima, among them Pizarro's bones and the Cathedral. If they had been up for a prize, it is likely that they, too, would be on their way north.

A few other items were overlooked by the American team in the rush, the same being first place in the unlimited entry three position match, No. 3, finally taken by Martino of Argentina on the Creedmore settlement of his tie with Lieutenant Hinds; and the gold medal for the best man in the standing position in the team match, going to Navarro of Cuba.

Outside of this the record of the American team in Peru was one of a clean sweep even though to do this called for record-breaking scores.

To make the matter more emphatic the Americans insisted on rudely crowding into the first six places in the Visitor's Cup match; three positions at 300 meters; the first three places in the Master Rifleman's point match (100 points); the first three in the carton match; and the first nine places in the reduced bull's-eye limited entry prone match.

Vermette strolled past during the struggle for the Peruvian Cup and emerged from the muss with the special Argentine medal for high man in this match, the same being Vermette's reward for getting out of the bull but once in his 45 shots at 400, 500 and 600 meters.

Outside of this the American team generously allowed the foreign gentlemen to take anything they wanted in the prize list.

December 29th, shooting under the usual overcast sky of the Lima section of Peru, and with light winds stirring, the American Pan-American Team, consisting of Fisher, Hinds, Morgan, Coulter and Rehm, proceeded to smash not only all existing Pan-American team records by hundreds of points, but to shoot holes in most of the records made by international free rifle teams with their heavy barrels and set triggers, instead of the heavy, six-pound pulls and plain Service rifles of the Pan-American Team.

And it is well that they did smash all records and cover themselves with glory, because on their heels bayed the bloodhounds from Cuba, dangerous in the individual matches, nearly the victors in the Trophy of Peru match, and now crowding the American team at every stage. Had the Americans averaged around 1010 instead of 1025, the Cubans would have won. The average of 1000 the American team officers thought would be enough, would have seen Cuba victor by 38 points.

The American team scored 5123, Cuba 5038, Argentina 4934, and Peru 4778.

In 1912 the American team winning the Argentine Cup scored 4722 and Argentina scored 4597.

In 1913 the Argentinos, winning, scored at Perry 4626, and the United States' team 4553, according to the records of the Peruvian rifle shooting chaps.

The American team of 1924 used Lyman instead of Service rear sights, that is the only difference in the equipment.

The Argentinos, most feared rivals of the American team in the Pan-American, were beaten 189 points and were never dangerous save in the standing position in which it was conceded they would take a little lead.

A new star has arisen in the shooting firmament—Cuba—using American rifles and American ammunition, trained by Americans in the start, using American positions and methods, up-to-date, ambitious and intelligent. No longer do we have to hanker for new worlds to conquer, for a worthy rival in the Palma match, for somebody that would make it interesting for us without having to throw away our own good rifle and take to using their bows and arrows.

We can find all the trouble we need just off the tip of the coast of Florida. Next year, when the Pan-American is held at Havana, as decided by the Congress at Lima, we'd better watch our step. When a team from a country unknown in the rifle shooting game can hang grimly to the Americans through three stages of a prone match and outshoot them at the longest range, and then can stay within 74 points of a team gone temporarily crazy and shooting free rifle scores, then that country is worth watching in the rifle game. The Argentinos were snowed under by the Pearl of the Antilles by 115 points in the Pan-American.

From the 16th of November until the 28th, the team from the United States, consisting of 11 men including the team officers pounded away through the four re-entry matches which composed the Peruvian individual program. Some of these matches, like the carton, permitted of but three chances, 100 shots each, one of them permitted only ten tickets with the best two counting.

The program faced by the American riflemen when the opening gun boomed on the 16th, included the four rifle individual matches, the Trophy of Peru, scheduled for the 27th, open to teams of six, ranges 400, 500 and 600 meters, targets similar to our "B" in expanse of bull for each distance; and then the Pan-American Team Match on the 29th.

There were also revolver matches, but as the team matches called for revolvers of not over six-inch barrel length, and as the American team had a fine supply along of free .22 pistols, it was thought that some little argument might arise if they went in with these guns. Somebody in Washington must have had a Sowegian translate the Spanish Pan-American program because the first glance showed that there were no free pistol team matches, and that there was a revolver team match. Wherefore, the pistol matches held in fields afar from the rifle range, the American sharks, such as Vermette, Hinds, Fisher, *et als*, regretfully passed up the hand gun variety of disturbance.

The four individual matches indicated a vivid lack of imagination on the part of the framers of the program because two of them were duplicates in conditions, and there was no single entry match scheduled in which the consistent shot might show up the re-entry business in which persistence and Lady Luck played a large part, provided it was backed up by pretty fair shooting ability.

The first spasm, forgetting the Peruvian indefinite nomenclature, which babbled a lot about Concurso but didn't say much, if anything, consisted of the Visitors' Cup Match, for a cup presented by the American minister to Argentina, Mr. Garrett. It was open only to the visiting nations. It called for tickets of five shots, costing 50 centavos each, or 20c in real money, and three positions, standing, kneeling, and prone. The winner was to be that party who had accumulated the best

ten shots standing, best kneeling and best prone; in other words, the best 30-shot total, taking ten shots in each position. You could use any five-shot string or series.

Match No. 3 was the same ruckus, but open to anybody except Chilians, there being a $50 reward for finding one of them at the Pan-American.

Match No. 2 was the old and reliable Carton or Master Rifleman's Match, in Spanish the *Maestro Tirador*. In this argument the reward went two ways, first to the man getting the greatest number of points on the 300-meter target in 100 consecutive shots, fired in 48 hours, and second to the man with the greatest number of cartons, the same being all the target within the 7 ring, or roughly within a 16-inch circle at 330 yards. The aiming bull remains the same, the 24-inch standard bull containing from the 5 to the 10 rings. If a fellow made 100 cartons, he won, but if two fellows performed this seemingly impossible stunt, the man with the greatest number of tens, got the match.

Putting 100 shots into this carton sounds easy, but witness the fact that in 1912, but one 100-shot carton was made, according to the records, Lloyd denying even this, and in 1913, none was made at Perry. Likewise am I ready to raise the right hand and certify that some luck as well as good management is called for, as witness the following touching incident. With 100 cartons but a poor point score to my credit for my first 100-shot ticket, I got another 100-shot ticket, 100 nice, handloaded cartridges, dug two hand selected holes in the firing point, went down and sighted into the ten-ring at the practice target, came back, and without taking the sling off my arm, took deadly aim at the first official target—and hooked a wide and juicy six! Only sevens counted as cartons.

Explain it any way you will, I used six different explanations and they were all received with sniffs. There was also the sad incident of a young man named Morgan, not unconnected with the Navy, who also laid him down and shot him a nice six for his first record.

As he did this several days before my exploit and as Joe Jackson said that he got the six because he, Morgan, was dumb, I didn't' insist on this theory as to the reason for my six. Anyhow, difficult though it may seem, this carton may be missed if enough care is used.

The last match of the four was on a bull's-eye reduced to the 8, 9 and 10 rings, for aiming purposes, or a 12-inch black.

It was on the standard 300-meter range, and the 300 meter target thus changed, prone, limited to ten strings of 10 shots, the best two counting. This is Match No. 4.

The first disturbance that broke out shortly after the 16th was Steve Monahan hanging up a 98 and a 95 on this No. 4 small bull's-eye, a total of 193 ex 200.

This gave the field two consecutive chills because nobody cared much about trying to beat a 95, and less about a 98, natural when you reflect that the 10 ring is 3.97 inches across, and the 9 ring about 8 inches, at 330 yards.

However a lot of pigheaded gentlemen continued to assault this match until one day, toward the close of the performance, Lieut. George Rehm, of the Cavalry, known among the four bear cubs as "Custer," hooked a 98, and a little later a 96 to back it up.

By common consent it was decided that this was a poor match, and of no interest to anybody from that time on.

The next event to mar the ceremony was the fact that it was found that this Remington 180-grain stuff would shoot with a beautiful continuity into the carton or 16-inch bull, if you did your part to some little extent and didn't ask the ammunition to rectify elbow slips, cock-eyed views of the bull, shots on the wrong target, etc.

Instead of being acclaimed the victor and crowned with a laurel wreath for making 100 cartons, the American rifleman, returning in the eventide, was acclaimed a ham-and-egger and crowned with a bottle if he didn't make 100 cartons. It was no place for a gentleman, that American rifle team. The man who broke a world's record was growled at for not breaking it hard enough and a record holder lasted only long enough for some kind team mate to seize his rifle and sally forth to the firing line.

When the fuss cleared away in this carton of master rifleman's contest it was found that some 38 cartons of 100 consecutive had been shot, most of them the first 100-shot ticket.

Ten out of the eleven Americans had 100-shot cartons, the eleventh man, Hinds, being busy elsewhere.

The conditions stated that any man making 85 cartons out of the 100 shots would be proclaimed a Master Rifleman. After the first day the conditions were hurriedly modified to read that any man who couldn't make 85 cartons in 100 shots would be awarded three swift kicks in a locality that would make him ineligible for any sitting matches for some time.

Left—"The Poligono," combination of range house and dining room at the Lima Matches.
Below—Lt. S. R. Hinds who tied for the Individual Championship and won the kneeling and prone matches.

Capt. Joe Jackson was the first man to make 100 cartons, and to break the world's record with his score of 903, the previous years having shown 888 as the high point total.

Joe made for the American tent on a dead run, but before he could make his announcement three other fellows beat him, and took his hard won record away, the first man being Diaz of Cuba, with 908. Oh, this was a sweet little game for cripples and poor chaps with weak hearts.

Finally two fellows with telescopic eyes, who should have been barred before they started, Rehm and Vermette, had their attention drawn to this match. They hooked a ticket apiece, laid down on nearby targets, and proceeded to knock out 100 cartons each, and two point totals of 933, Rehm, and 932, Vermette.

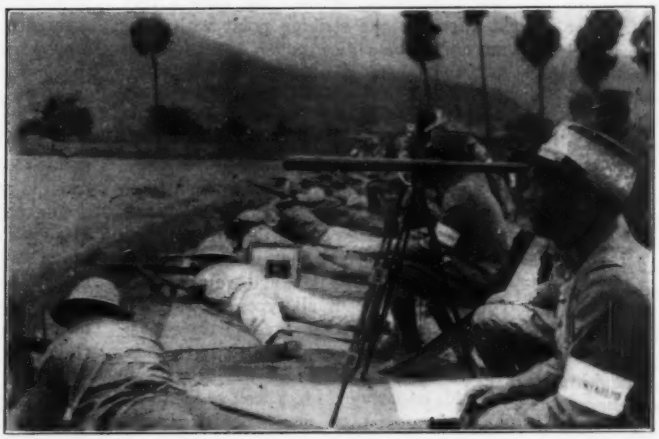
As I remarked, the old record was about 888.

So another match was wrecked for all the rest of the gang.

The Visitor's Cup Match was for the grand prize of the cup, a gold medal and 25 per cent of the gate receipts. Second man was offered 16 per cent of the said receipts, no medals, no nothing, third man 12 per cent, etc. 75 per cent of the receipts going to the fighters. As the United States paid in most of the entries in all of these matches, this was a lot like shooting for your own nickel. It was typical of the Peruvian price list, a picayune lot of piffling rewards that looked like skim milk compared with the Argentine prizes of the first Pan-American.

No. 1

No. 2



No. 3

No. 4

No. 1—Rear of individual booths on the 300 meter firing line.

No. 2—In the pits with the markers and scorers. These Pan-American pitmen gave most excellent service.

No. 3—The 600 meter firing line during a big match. Members of the Cuban team in solar helmets are on the left of the line.

No. 4—The 800 meter firing line with Rico, the Argentine crack, shooting.

The two weeks' struggle for this match saw Bud Fisher *Campion Mundial,* as the Spanish call him, getting irritated one morning toward the close of the shoot, and shooting enough good five shot tickets to give him 282 for a total. Coulter took second by virtue of a Creedmore in the offhand position over two others tied with him with 279. If you have not tried this game, I can assure you that adding points to your score when you have a total of more than 275, is a process that would make extracting double back teeth an easy and pleasant one by comparison.

The battle royal was waged in Match No. 3, the same conditions as No. 1, or the Cup, but open to anybody—anybody but Chilians as I remarked before.

The best shot of the Argentinos, and probably the best shot of the American team for the time being, Hinds, locked horns over the minor question as to who was to get the merchandise prize valued at 30 livras, hung up for first, 30 livras being $120 American. This sounded so big compared with other Peruvian prizes that both shooting giants made a run for it, Martino barking his shins on Hinds' Springfield the first rush, and Hinds falling over Martino's Mauser later on.

Much peeved at the first scrimmage, Martino went up to the office and told them to give him $19 worth of tickets and to make it snappy. So equipped he returned to the fray, and told Hinds that he didn't like to spend so much dough, that it would only leave him about twenty livras in the clear when he finished. To which Hinds replied sweetly that he meant he would be ten livras in the hole.

So they went at it, hammer and tongs, while little Rico, the handsome humorist of the Argentine team, proceeded to butt in, and Navy Morgan also cast his hat into the ring.

Martino finally got his scores up to the point where every time he got an eight, he would annul the ticket and start a fresh one.

A couple of days before the finish, the three or four bear cubs, Morgan, Hinds, Vermette and Rehm, proceeded to get into a jamboree down in the tent as to the possession of an apple, the argument terminating with Hinds wrapping his arms around Rehm, and then falling heavily, striking his upper lip full force and with the weight of two men, on the edge of the table as he fell.

After he came to they escorted him down to the surgeon and the sawbones patched him up, returning him to the American team the worst looking specimen ever seen in or out of a prize ring. He was fired home to the hotel and laid off for the next day, luckily the team match for the cup. At this stage he was tied with Martino with 286, the Argentinan Creedmoring him on a better standing score.

The last day of the matches for the individual trophies saw Hinds and Martino in a long day's struggle for the odd point that would break the tie and give the victory to one or the other. Martino was satisfied to call it a day, and take the prize on the tie count, but he stayed grimly in his booth as long as Hinds stayed, firing score for score with Hinds, and neither able to get five shots that would break the total of any five shots then on record as part of the high 30. To the last minute at the gun fire at 6 o'clock, and the afternoon before the team match, Hinds fought it out, shooting beautiful scores, but not able to raise his total.

The gun found Martino the victor by the tie route, and the end of one of the gamest fights seen on a rifle range.

Rico took third, Morgan fourth. A Peruvian by the Spanish name of Kerkhoff, fifth, and Fisher sixth, with 279.

The next day, the Pan-American team match showed the effect of the struggle, added to Hinds injury a day or two before, and the game lieutenant had one bad string, with a miss in it, but still fought it out, and came out first, or second, for all the teams, as a certain doubtful target may determine.

There is no gamer chap in the rifle game, nor any man who gives greater promise of eventually lifting the crown from that other great shot, Sergeant Morris Fisher, world's champion.

And that's all for this time because we are nearing Panama.

Here are the Pan-American Team Match scores—unofficial, no bulletins having been received before I left. The individual championship as to Hinds and Fisher is still unsettled.

Standing

1.	Miguel Navarro	40	330
2.	Armand M. Morgan	40	327
3.	Juan Martino	40	324
4.	Abelardo Rico	40	324
5.	Jose J. Guido	40	318
6.	Morris Fisher	40	313
7.	Sidney R. Hinds	39	313
8.	Eugenio Andino	40	307
9.	George A. Rehm	40	305
10.	Pedro Roca	40	304
11.	G. Alfonso Cuervo	40	304
12.	Raymond E. Coulter	40	302
13.	George del Maso	40	300
14.	G. Santa Maria	40	297
15.	Adolfo Arana	40	295
16.	Ambrosio Diaz	39	293
17.	Willy Kirchoff	40	290
18.	Jose Froelets	40	288

(Continued on page 16)

Resting the Rifle

By Maj. Townsend Whelen

WITHIN the past six months one of our sporting magazines has devoted considerable space to the advocacy of the medium weight hunting rifle as opposed to the featherweight. The principal reason advanced in support of the contention is that the rifle should hit where it is held, and it is asserted that no rifle will, but that some, namely the medium weight or heavy barreled rifles, will come nearer to it than others. That the lighter the gun and the shorter the barrel the farther a rifle will shoot from where it is aimed, presuming that it has been sighted for offhand shooting but fired in various positions, and particularly if the barrel be rested on a solid substance in any way.

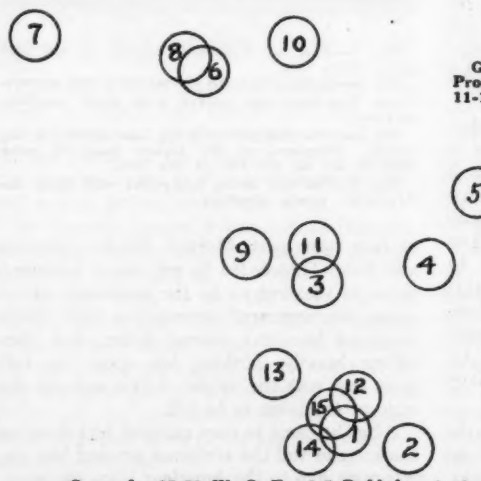
One writer mentions trying a .32-40 Marlin rifle, half magazine and light weight, many years ago, and finding that it grouped 12 inches higher at 200 yards when fired from a muzzle rest than when shot offhand. Then a heavier .32-40 single shot rifle was tried and this shot 6 inches higher from rest than it did offhand at 200 yards. The writer concludes with the statement: "Take a light rifle with 3,000 feet velocity and 2,500 pounds energy, barrel 22 inches, fire five shots offhand at 100 yards, five from the knee, five sitting, five prone, and five from muzzle rest; keeping the point of aim the same, and see if the shots are not scattered all over a 24-inch circle at 100 yards?"

Now I have always been an advocate of the medium weight rifle, and have cared little personally for the featherweight. As compared with the latter I have found the former to be slightly more accurate, to have less recoil, to hold steadier, to swing better on moving game, to be less disturbed by slight flinches at the trigger, and to shoot the various loads from the highest power to short range and gallery loads with less variation in sight adjustment. But I have never been able to reconcile my experience with this theory of the effect of resting the rifle, and with 24-inch groups at 100 yards, particularly with modern weapons.

I have indeed found it to be quite true that black powder rifles, and other rifles when firing cartridges of similar velocity to black powder loads, do shoot *slightly* higher when the muzzle is rested than when fired offhand, but at the ranges at which such low velocity rifles are fired the differences in location of centers of impact are generally so slight as to be of little account from a sporting standpoint. With modern high intensity rifles, even with the well known featherweight types, I have never found that holding the rifle in the various firing positions, or resting the naked barrel of the rifle on hard objects in various ways, ever made any appreciable difference in the location of the center of impact, the point of aim in all cases being the same.

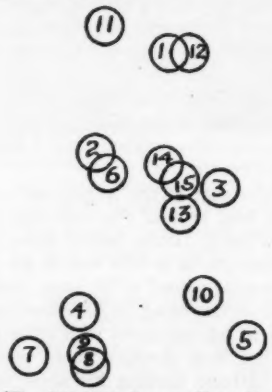
On page 411 of "The American Rifle," I give the results of my earlier experiments in resting the rifle. Also during the year 1919 I investigated this matter quite fully, and conducted a large number of experiments. The results are given in an article published in this magazine on December 1, 1919. Briefly it was there shown that while the manners of holding and resting the rifle did have a very slight effect on the striking point with rifles having muzzle velocities around 2,000 feet per second, that there was no discernible difference with the Springfield (M. V. 2,700 f.s.), either military or sporting type, up to at least 600 yards, the longest range included in the experiments.

In view of the publicity that has been given to this matter in other periodicals it was thought best to review it a little. Accordingly several of us, all good shots, determined to try the matter out one day, and we assembled a representative lot of all types of rifles for the tests. All rifles were fired in three positions, five shots in each position, that is: (1) With the rifle rested at the balance on many folds of heavy cloth, a well-padded rest, which had proved on many occasions over a score of years to give results exactly comparable to offhand shooting with both black powder and high velocity rifles. (2) The usual prone position with gunsling. (3) With muzzle rest only, the naked barrel of the rifle being rested on the edge of a solid plank placed four inches from the muzzle. In each case the rifle, ammunition, man firing, point of aim, and sight adjustment were constant for all three groups. The light also was practically the same throughout all the firing, the firing point being shaded, and the sun shining on the face of the target. The following, in brief, were the results:



Group I—.32-20 W. C. F. 1-5 Padded rest at balance. 6-10 Muzzle rest. 11-15 Prone with gunsling.

.32-20 Winchester.—Rifle was a Winchester Model 53 with very light 20-inch barrel. The range was 50 yards, and the ammunition Winchester low velocity smokeless. This rifle and cartridge were selected because the combination gives about the lowest muzzle velocity of all center fire rifles, because the rifle itself was very light, and because according to my own experience it should give the maximum difference between the centers of impact of groups fired in various positions and rests. As shown by the target above there was practically no difference between the centers of impact when firing with padded rest and prone with gunsling, but as would be expected from such a weapon, the group shot from muzzle rest did strike high on the target. This rest group centered 1.30-inch higher than the other two groups. This would mean that the rest group would be approximately 2.6 inches higher than the offhand and prone groups at 100 yards, or 4 inches higher at 150 yards, beyond which range this low power, high trajectory rifle would not often be fired. This experiment seems to prove the contention that with low velocity rifles the muzzle rest groups do have a slightly higher center of impact than those fired offhand.



Group III—.250-3000 Savage Short Range. 1-5 Prone with gunsling. 6-10 Padded rest at balance. 11-15 Muzzle rest.

.250-3000 Savage, short range load. Rifle was the same as in Group Number 3. Ammunition was hand loaded, 12 grains of du Pont No. 80 powder and 87-grain Western jacketed bullet, muzzle velocity 1,500 feet per second. According to our theories this rifle should show a difference due to rest when used with this low velocity ammunition, and it did. The shooting was by Doctor Mosteller at 100 yards. The target above shows the higher point of impact due to resting the rifle. The group fired with padded rest was the lowest on the target, the center of the prone group being half an inch higher, and *(Continued on page 15)*

Ordnance at the National Matches

By Major J. S. Hatcher

FOR many years the rifle shooting fraternity has formed the principal liaison between the Army Ordnance Department and the average American citizen. The high point of this contact between the Ordnance Department and the man in the street comes annually at the rifle shooting classic called The National Matches, which is attended by several thousand citizens, both military and civilian, from all branches of the Service and from all walks of life.

The Ordnance Department is brought sharply to the attention of this group principally because it furnishes them the rifles and the ammunition for their competitions, and it is to the Ordnance Department that they must appeal for help in case of difficulty, and carry out suggested improvements.

A reflection of this is found in the fact that most National Guard Ordnance Officers of high rank attain their office through being prominent rifle shots.

The agencies that handle the subject of marksmanship in the United States are:

The National Board for the Promotion of Rifle Practice, which is under the direct supervision of the Assistant Secretary of War, who is Chairman and President of the Board. Through the activities of this board the interests of the military and civilian riflemen are served, and the activities of all riflemen coordinated so as to assure the continued healthy growth of rifle practice as a national institution.

The object of the board is to further interest in rifle and pistol marksmanship among the citizenry of the United States at large in the interest of the national defense.

The National Board handles the development of military marksmanship both in and out of the Services. Under the National Board there is a War Department officer detailed as Director of Civilian Marksmanship. His duty is to aid the civilian clubs and individuals who are interested in marksmanship.

Another powerful agency working to the same end is an organization of riflemen and pistol shots banded together in an association for the furtherance of the interests of shooting of all kinds. This organization is called the National Rifle Association of America, and was incorporated in 1871. Since that time it has carried on its roll as active members and officers the best known target riflemen developed in this country. Today, however, it is far more than a target shooters' organization. It has reached the status of a national fraternity of American citizens believing in the furtherance of rifle shooting as a splendid sport and a measure of national defense.

In the latter capacity, the National Rifle Association has been recognized as a medium through which is conducted the promotion and organization work of the National Board for the Promotion of Rifle Practice. By reason of this recognition, the National Rifle Association works in close cooperation with the War Department.

This Association has a large and rapidly growing membership scattered in every part of the country, and has been a powerful factor in securing legislation which has enabled the Ordnance Department to make advances in arms and ammunition which would not otherwise have been possible.

The National Matches

Each year the War Department holds a competition known as the National Rifle Matches, which includes a National Individual Rifle Match, and a National Individual Pistol Match, open to any citizen of the United States; and a National Rifle Team Match, and a National Pistol Team Match, open to civilian or military teams.

At the same time that these matches are held, the National Rifle Association of America holds a series of historic matches with rifles, pistols and revolvers.

In past years these matches have been held in various parts of the United States. The last four matches have been held at Camp Perry, Ohio, which has been the scene of twelve of these matches altogether.

Camp Perry is the Ohio State Rifle Range located on the shore of Lake Erie about half way between Cleveland and Detroit. It is one of the finest and best equipped rifle ranges in the world. There are at Camp Perry:

50 pistol targets	50 800-yd. rifle targets
66 200-yd. rifle targets	50 900-yd. rifle targets
97 600-yd. rifle targets	50 1000-yd. rifle t'gets

The long range targets can be combined so as to give one hundred targets at 1,000 yards.

The direction of firing is north, and the bullets fall into Lake Erie.

Owing to the increasing popularity of the National Matches in recent years, the number of competitors has been increasing steadily so that at the present time steps are being taken to enlarge the firing facilities at Camp Perry beyond their present magnificent proportions.

The World War brought sharply to the attention of the authorities the fact that proficiency in rifle shooting is one of the most powerful assets for national defense, and since that time the National Matches have been preceded by a Small Arms Firing School. This has become perhaps the most successful and beneficial feature of the matches. The school was operated this year under the direction of Lt. Col. Smith W. Brookhart, O. R. C., President of the National Rifle Association, assisted by a corps of the most competent instructors, headed by Capt. F. G. Bonham, Infantry, Senior Instructor.

Attendance at the Small Arms Firing School is not compulsory upon National Guard teams or civilians attending the matches at their own expense. All members of the National Guard, and all unattached individuals, are, however, cordially invited to attend the school. This affords additional practice and instruction.

Any citizen of the United States is eligible for enrollment in the school, and those who qualify are graduated with certificates as instructors in pistol marksmanship. The body of graduates of this school will form a most valuable asset to the national defense in case of an emergency.

At the National Matches it is the privilege of any American citizen who desires to do so, to go through the school without any expense to himself, except for his meals, and of course transportation to and from Camp Perry.

It is impressed upon the citizens that they are not expected to be good shots in order to attend this course of instruction. The school is conducted for people who are not expert shots, but who want to learn. The man who is generally interested in the use of firearms, but who lacks practical and technical experience, is considered the very best material for training at the school.

The School of Instruction began this year on August 30th, for students of the R. O. T. C. and C. M. T. C., and any unattached civilians desiring to attend. For regularly organized civilian teams, and for National Guard Teams, the school opened on September 6th. After a most successful course, the school closed on Saturday, September 13.

The N. R. A. Matches opened on September 15, and continued through until the beginning of the National Individual and Team Matches.

The attendance at Camp Perry this year included in round numbers over 2,200 competitors. It has been thought in the past that the value of these competitions in diffusing a knowledge of marksmanship through the country was somewhat impaired by the possibility that the same crowd of shooters would attend the Camp Perry Matches over and over, and the training would therefore be wasted on people who already knew how to shoot. This year careful statistics were taken with a view to determining the condition in this regard, and to the surprise of even the officials who have run these matches for several years, it was found that the proportion of absolutely new material was approximately 85% of the total number of contestants.

Test of New Developments

One feature of the National Matches which has not been realized in many quarters, is the fact that these series of competitions has, since the World War, furnished a most valuable service test of new developments in arms and ammunition made by the Ordnance Department in response to the lessons of the World War.

During the War it was plainly seen that our 150-grain Service type of small arms ammunition was capable of tremendous improvement.

This bullet was sharp pointed, with a flat base, and was covered on the outside with cupro-nickel. It was found that this cupro-nickel would collect in lumps on the bore of the rifle, and would therefore cause inaccuracy. It was also found that owing to the square-base shape of the bullet, the range was less than could be obtained by refinements in shape.

Immediately after the War, the Ordnance Department started a series of intensive experiments to overcome both of these defects, Before the change in shape had been fully worked out, experiments at Frankford Arsenal indicated that the metal fouling could be done away with by using a powder containing a decopperizing alloy. All the Arsenal firings with this ammunition were highly successful, and it was placed in the National Matches that year.

The ammunition was found to be quite accurate, so that many records were broken. It was soon found, however, that many contestants complained of a black sooty deposit in the bore of the guns, which could not be removed with any amount of scrubbing with clean rags. An investigation showed that this was a deposit of the non-fouling alloy which was volatilized when the powder was fired, and was later deposited in the bore.

This deposit was easily removed by means of a brass cleaning brush, and owing to the fact that guns are thoroughly and properly cleaned after each firing at the Arsenal, this condition was not discovered at the Arsenal firings.

However, at Camp Perry there are fired approximately one and one-half million rounds of ammunition each year, and it is fired by people from every walk of life. There are experienced military riflemen on the Service teams, whose technical knowledge is a great assistance in discovering defects and recommending changes. There are also the absolutely inexperienced civilians, some of whom will make the mistakes which would be found in a large army of citizen soldiers, and their troubles are carefully studied by the Ordnance Department in an effort to make the ammunition "fool proof."

The Ordnance Department has keenly realized the advantage of the National Matches as a service test of ammunition, and has had technical observers on the ground each year to follow the performance of the ammunition most carefully, with a view to energetic action in correcting any defects that may occur, and in making improvements.

In view of the trouble which occurred with non-fouling powder in 1920, the Ordnance Department, in 1921, placed on the firing line at Camp Perry a bullet the jacket of which was covered with a non-fouling alloy. This ammunition worked well at the Arsenal, and at Camp Perry was found to be a still greater improvement in accuracy than the 1920 ammunition, but a number of contestants used grease on the neck of the cartridge, which prevented the neck from readily expanding under the powder pressure, and it was found that under these conditions the surface of the bullet which was roughened by plating with the non-fouling alloy, had a tendency to sieze in the brass neck of the cartridge and cause erratic pressures, so that some trouble was encountered with swelled head cartridges, due to high pressure from using grease.

Experience at the National Matches during this period also confirmed the observation that cartridge cases annealed soft enough to be satisfactory for use in machine guns, caused excessive difficulty in extraction during rapid fire. In view of this fact, the Ordnance Department developed an improved rifle cartridge case anneal, which permits the cartridge case to be extracted with extreme ease under all conditions of rifle shooting.

With the bullets as used in the 1920 and 1921 National Matches, the extreme range with the rifle elevated to around thirty degrees was approximately 3,300 yards.

Boat-tailed Bullet

The next year, 1922, saw the introduction by the Ordnance Department for the National Matches of a bullet with a tapered base. The weight of this bullet was increased to 170 grains, and the taper on the base was six degrees. This bullet was found to have a maximum range of approximately 1,300 yards greater than the former bullet with the same initial velocity. This increase in range was due to the fact that the tapered tail reduced the drag of the air on the rapidly moving bullet. Of course it will be understood that this increased range *as such* is of no value to the rifleman, although it is to the machine gunner. However, this ammunition did have a great advantage for the rifleman, in that the lessened drag on the bullet allowed it to reach the 1,000-yard target much more quickly than did the old bullet which started out with the same range.

The Department was very much gratified to find from the results at Camp Perry that the new six-degree bullet was more accurate than the previous ammunition, and so this six-degree boat-tailed cartridge was continued for the National Matches of 1923, where it produced extreme satisfaction on account of its very much increased accuracy over previous types of bullets. However, in the meantime the Ordnance Department in seeking a new type of ammunition to be adopted for the Service when the present war time supply of 150-grain bullets is exhausted, found that still further decrease in air resistance could be obtained by making a nine-degree taper on the bullet instead of a six-degree taper. A series of proving ground firings with a number of bullets of various shapes and degrees of taper, lead to the use for the 1924 National Matches of a nine-degree boat-tailed bullet which had an increase in range over the six-degree bullet which was almost as great as the six-degree had over the old 150-grain bullet.

The new bullet will go approximately 5,900 yards at maximum elevation, as against 4,700 yards for the six-degree advantage the six-degree had over the old 150-grain bullet.

The practical effect of this is seen in the fact that if the rifleman should target his rifle on the 1,000-yard target with the old 150-grain type of bullet so that he would hit the bull's-eye, and would then put in one of the new cartridges with the same velocity his bullet would go nearly ten feet over the target. This is owing to the fact that the lessened air resistance allows it to get down to the 1,000-yard target before it has dropped as much as the old bullet did. In other words, its trajectory is flatter, and consequently its danger space is much increased, which makes a very much more effective bullet for military uses.

Another marked improvement is that the new bullet is not affected as much by wind as the old bullet was, because the wind does not have as long to act on it owing to the fact that it gets down to the 1,000-yard range quicker.

In spite of the fact that the Ordnance Department test showed this bullet to be superior to the former types, the verdict of the rank and file of National Match shots was awaited with anxiety. This year the Ordnance observers at the matches were highly gratified to have extremely satisfactory reports from all sources on the performance of this bullet. The testimony of the various teams and individuals showed conclusively that this bullet has a marked superiority over previous types, especially in long range shooting, on account of its lessened angle of elevation, reduced time of flight, and smaller wind correction.

National Match Rifles

While the greatest field of improvement since the War has been in the ammunition, the National Matches also serve as a service test for any changes that may be made in the arms. Since the War the attention of the Ordnance Department in small arms lines has been focused on obtaining a satisfactory semi-automatic shoulder rifle and therefore only minor changes have been tried out on the Springfield.

There has, however, been developed by Springfield Armory a .22 caliber rifle for training in marksmanship which is becoming a favorite through its performance at the National Matches. This rifle is available only to members of the National Rifle Association, and to those in the Service, as it cannot be sold to the public at large without coming into competition with commercial makers of .22 caliber rifles. The fact that commercial rifles are on hand at Camp Perry and can be purchased by individuals for about the same price as the government rifle can, means that if the commercial rifles show marked superiority, those small bore rifle shots who are in the Service, and therefore entitled to buy the government rifle, will purchase instead the commercial product. In the face of this competition, the new .22 Springfield showed up exceptionally well in the matches this year.

The small bore classic is the Dewar Match, shot annually between Great Britain and the United States. This year this match was shot by the American Team on September 28th at Camp Perry under very bad weather conditions. The American Team won the match, and the high score was made with a Springfield .22, which formed a spectacular climax to the already highly gratifying performance of the Ordnance *materiel* at this year's matches.—[Courtesy *Army Ordnance.*]

The Wind Problem

Pratical as Opposed to Theoretical Considerations

VAGARIES in wind force and direction are, without doubt, responsible for more shots out of the bull's-eye than any other cause. That is, of course, taking the case of the really good holder. By introducing an element of uncertainty, the wind can have a psychological as well as an actual effect that affects the ultimate destination of the bullet, the actual point at which it will hit the target.

That bad visibility is of little moment is evidenced by the large crop of big scores put on in conditions such as those which obtained on the recent Saturday when Arthur Fulton totalled a full score "through the ranges." Considering the comparatively few men who were shooting on that occasion, there were a surprising number of scores above 100. The visibility was distincly bad for at least half of the shoot. The factor which is normally with us, however, a shifting wind, was absent. There was never more than a minute change, and it could be seen every time. Also it was slow. This enabled shooters to concentrate on the problem of the moment, which was the correct alignment of the sights. Had there been a tricky wind as well as bad visibility, there can be no doubt that scores would have been much lower, even allowing for the fact that the best ammunition available was being used.

The fact is that few of us can really concentrate on more than one thing at a time. If the wind demands all our attention, if we must get the shot away when the wind is just right, then we are liable to let something go in the way of sight alignment. We may also introduce a small amount of "snatching" at the trigger. Of course, holding should be purely automatic, as should trigger pressing; but the brain reacts to anxiety in curious ways, and drill movements that are normally subconsciously performed perfectly when the brain is not agitated may become the merest trifle ragged when there is an element of doubt.

This is an argument in favor of constant practice. The function of drill is to make the subconscious brain work so perfectly in the carrying out of any evolution that action will not become ragged when disturbing elements are introduced. But it is doubtful that, save in very exceptional cases, the human brain is capable of perfection. It is because of this that the full score, on a target just within the capabilities of rifle and ammunition, is so rare an event.

In this number we publish two articles on the problems that the wind on a range introduces into our sport. One is by Doctor Kelly, and is a purely technical consideration of what takes place. The other is a breezy and popularly written article by Major Hardcastle, dealing with one small fact only. It will be time well spent by rifle shots to read both of these articles very carefully. As we have often remarked, "rule of thumb" methods may bring a certain measure of success, but it is the man who really knows what he is doing who comes out on top the most frequently. We would counsel our readers not to be daunted by the small show of "mathematics" in Doctor Kelly's article. A pencil and paper and five minutes' work while reading the article will show that the mathematical-looking formulae are really only simple arithmetic.

Though a large number of men, by long and keen observation, have learned to guess wind changes very successfully by rule of thumb methods, there can be no doubt that all of us will be benefited by an occasional "refresher" as to the theory of the business. It may be argued that theory is of little use on the ranges, and that practical considerations are the only ones of any use to practical shots. This is a fallacy. All rule of thumb methods are based on theory of some kind or another. The rule of thumb man has collated certain experiences. He says to himself that when the mirage or the flags do certain things, then such a change of aiming-point is indicated. He makes the change, and is rewarded by a bull or some other score in exact measure to the correctness of his theory.

There is no reason to suppose that a master of correct wind theory will be a good shot; but a knowledge of the real facts that govern the action of moving air on a moving bullet must disabuse the mind of any incorrect theories that may be formed as a result of faulty observation or a faulty application of observed facts.

As a case in point, many men will tell you that a wind from the right has more effect on a bullet than a wind from the left. Some try to argue that this is really due to the drift of the bullet, as it is found more at long ranges than at short. Now we know that at any ranges at which we shoot drift affects the modern pointed bullet so little that its effects must be masked by errors of hold, to say nothing of errors in wind judgment. The drift is so small that it is beyond the observation of even the best holder. Obviously it is impossible that a right-handed wind can have any curious difference from a left-handed wind. Therefore we should expect that any such theory of different effect due to the direction of the wind is based on faulty observation, on lack of knowledge, or on a "left over" rule of thumb from the days when low velocity bullets were used, with a quite large drift that might have been distinctly readable at ranges beyond 800 yards.

Correctly applied observation teaches certain fundamental rules which cannot be ignored when wind-guessing. The most important is undoubtedly that changes in direction have far more effect than changes in velocity in any one shoot. Why this is so must at once be apparent to those who read Doctor Kelly's article. Boiling the thing down to actual, practical facts, we can say that changes in velocity are seldom more than ten per cent during the time taken by three men to fire ten shots each, and the ten per cent rule will probably hold during far longer periods. A change in wind force from, say, five miles an hour to fifteen miles an hour will be a very gradual one made up of many puffs up and fallings away.

Consider a definite case. You are shooting with five minutes' wind deflection on the sights. If the wind held perfectly steady as regards direction, you would not expect a change of more than half a minute, more or less, between shots. That is the reason why, when the wind is holding perfectly steady in direction, one can shoot right through one range without making a change. Even if the force of the wind demands a ten minute allowance on the back sight, not more than one minute change of actual force is to be expected.

Now consider change in direction. It is obvious that a change from a full cross wind to six or twelve o'clock wind will make a complete 100 per cent difference in the allow-

WINDAGE is an accuracy factor which of late years has given the American rifleman little or no concern. The development of Service match rifles of the highest standards and high-powered ammunition with wind riding bullets has reduced the windage problem to almost an arbitrary mathematical calculation. It has naturally followed that general discussions of the effect of wind on projectiles have not been as frequent as in the past.

It would appear, however, that the deflecting factor of air currents is still an important subject for study, discussion and speculation with the British. In fact, the December number of the British *N. R. A. Journal* devotes two separate stories and considerable editorial comment to this question. The contributions in question coming from Major Hardcastle and Dr. F. H. Kelley, each recognized as an authority, have evidently been very carefully prepared, and contain many facts and conclusions which should be of benefit to the shooter in this country who desires to keep abreast of the game.

They are, therefore, being reprinted herewith not only because of the collateral interest they may have for the Service rifle shot, but because they will be a very real help to many small bore shooters here. As rifles and ammunition of superior accuracy are being developed in the .22 caliber class there is a corresponding increase in the standard distances for this class of shooting, and the small bore shooter today needs as thorough a grounding in wind doping as did the men who were shooting the 220-grain Krag bullet twenty years ago.

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ance, and that different changes in direction can make any percentage difference in the allowance required.

Bringing the thing down to one solid fact, we can say that, generally speaking, at short ranges and when the inital allowance is not more than ten minutes, changes in force can be ignored. But changes in direction, which are visible on the flags, can never be ignored.

In this country light winds are usually very variable, particularly in direction. A two minute wind at 500 yards may be blowing straight across the range at one moment and straight up or down it at another. A two minute change cannot be ignored at any range. It should also be noted that, with very light winds, the change in force may be considerably more than ten per cent. That ten per cent change is only safe to reckon on when the wind is lifting the flags decidely.

It should be noted that, in every case, the accepted theory, as expounded by the experts, squares with fact as noted on the range. If something practically noted does not fit in with the mathematics of the subject, the fault must be found in faulty observation or deduction, and not in the expert's arithmetic.

The object of this dissertation is to insure that the majority of readers of the JOURNAL will take note of the fact that both Major Hardcastle and Doctor Kelly have something to tell them which is well worth their consideration.

Wind Deflection

By Dr. F. H. Kelly, G. C.

IN considering the effect of a wind in causing deflection of the bullet it is necessary first of all to determine how much of the wind is acting at right angles to the line of the bullet's flight and how much is acting parallel to it. Having thus split up the wind into two right-angle components, it is only that which acts at right angles to the line of the bullet's flight which need be considered for the purpose of determining the wind deflection. The diagram (Fig. 1) shows how the wind is split up into its component parts. The cosine of the angle which the wind makes with the line of the bullet's flight gives the proportion acting parallel to the line of flight, while the sine of the angle gives the proportion acting at right angles to it.

The foundation upon which the calculation of wind deflection is based is the fact that, owing to its gyroscopic properties, a rifle bullet in flight must always describe a minute spiral, the axis of which faces directly into the air resistance. The reason for this will be explained in a chapter devoted to the bullet's spin. The direction of the air resistance *relative to the bullet* is, however, clearly a very different thing from the direction of the wind, since the bullet is moving as well as the wind. To understand this clearly, imagine for a moment that, instead of the bullet rushing through the air, it is the air which is rushing past the bullet, which latter is still standing still. It will then be clear that the resultant direction of the air resistance when there is a side wind will make a small angle with the line of the bullet's flight. To take an example, if the wind be blowing at 50 feet per second at right angles to the bullet's line of flight, and the muzzle velocity of the bullet be 2,000 feet per second, then the diagram (Fig. 2), which

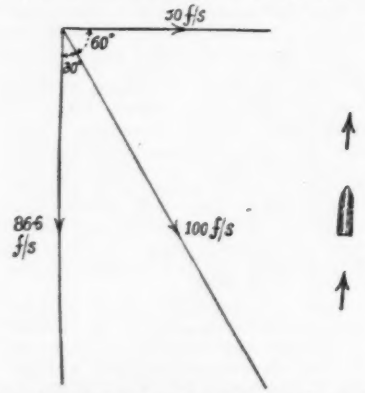


Fig. 1—Showing how the wind is split up into its component parts.

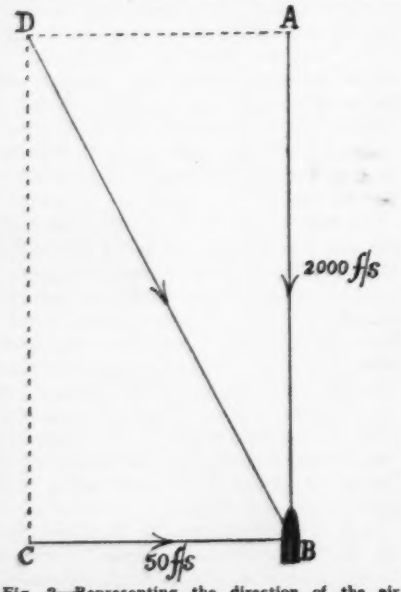


Fig. 2—Representing the direction of the air resistance to a bullet when there is a side wind.

is not drawn to scale, will represent the direction of the air resistance. *AB* represents the bullet's flight. *CB* represents the wind at right angles to the line of flight. Therefore *DB*, found by completing the rectangle, is the line of the resultant air resistance, and this is therefore the direction in which the bullet must point, and consequently travel *relative to the air*. The result is that in each 2,000 feet of flight, the bullet moves 50 feet upwind, *so far as the air is concerned*, and at that range of, say, 1,000 yards it would have moved 2,000 divided by 3,000 times 50 equals 75 feet upwind.

But during all this time that the bullet moves upwind relative to the air, the air itself is moving in the opposite direction at a steady pace of 50 feet per second. In order to find the distance which it moves, all we require to know is the time which it takes to traverse the range. Let us assume that in the above case this was 2½ seconds. Then during the time which the bullet takes to cover the range the air will have moved 2½ times 50 equals 125 feet in a direction at right angles to the line of the bullet's flight. The diagram (Fig. 3) illustrates what happens. Let *X* represent the position of the rifle, and *A* that of the target. *AB* is the distance which the bullet moves up into the wind, and *BC* is the distance which the wind moves while the bullet is covering the range. Therefore *AC*, the difference between the two, is the distance which the bullet is actually blown downwind, and this is 125 — 75 equals 50 feet.

The whole effect is very similar to that of a man who is trying to swim across a quickly flowing stream. In order to do so, instead of trying to swim straight across, he constantly aims much higher up on the opposite bank. similarly, in the case of the bullet, although in diagram 3 its actual course is from *X* to *C*, the direction in which it points is *XB*, or a line parallel to it. That is to say, the bullet is actually moving sideways to the direction in which it points, although, owing to the combined movement of the wind, it is always head on to the air resistance. Clearly, if in the above case the bullet did not lose any velocity during its flight, then it would reach the target in 1½ seconds, and its line of flight would be from *X* to *A*, and its wind deflection would be nil. Since, however, all bullets must

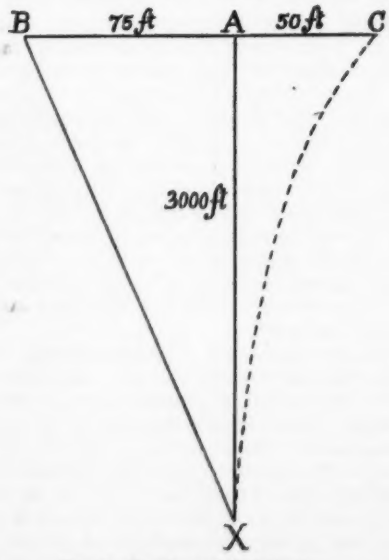


Fig. 3—Showing wind deflection.

lose velocity during their flight, *BC* must always be larger than *AB*.

An important point about this explanation of the wind deflection is that, since the bullet is always heading straight into the air resistance, except for its minute spiral mentioned above, the lateral pressure must be equal on all sides of the bullet, and consequently the length of the bullet has no more influence upon the wind deflection than upon the air resistance. The whole explanation is, indeed, based upon the assumption that the wind deflection is directly proportioned to the air resistance normally encountered by the bullet in its flight. In other words, the wind deflection is directly proportional to the amount the bullet is retarded by the air, or, expressed more exactly, to the difference between its time of flight in the air and its theoretical time of flight over the same distance *in vacuo*.

The formula for calculating the wind deflection according to the above theory is that the bullet's deflection in feet equals:

$$Wd\ T - Wd\ \frac{X}{V}$$

where X is the range in feet, T is the time of flight in seconds, W_D is the wind's component at right angles to the bullet's line of flight in feet per second, and V is the bullet's muzzle velocity in feet per second. This method of calculating the wind deflection was originally set down by Didion as applying to spherical projectiles. Younghusband first applied it to elongated rifle bullets, on the assumption, as described above, that they always face into the wind, and may therefore be treated in the same way as spherical bullets. In making calculations it is customary to ignore the effect of the front or rear component of the wind on the bullet's time of flight, T. Strictly speaking, the time of flight will, of course, be increased or decreased by a front or rear wind. The formula is usually written

$$Wd\ \left(T - \frac{X}{V}\right)$$

As an example of the working of the problem, let us find the effect on the S. R. Mark VI cartridge of the three following winds:

1. 20 feet per second from the front at an angle of 30 degrees to the line of flight;

2. 10 feet per second at right angles to the line of flight;

3. 20 feet per second from the rear at an angle of 30 degrees to the line of flight.

Working simultaneously:—

Front

$$\begin{aligned} Wd &= 10.0 \\ WR &= 17.3 \\ T &= 2.418 \\ Wd\ \left(T - \frac{X}{V}\right) &= 10\left(2.418 - \frac{3000}{2060}\right) \\ &= 10(2.418 - 1.456) \\ &= 9.62 \text{ feet} \end{aligned}$$

Right Angles

$$\begin{aligned} &10 \\ &0 \\ &2.400 \\ &10\left(2.400 - \frac{3000}{2060}\right) \\ &10(2.400 - 1.456) \\ &9.44 \text{ feet} \end{aligned}$$

Rear

$$\begin{aligned} &10 \\ &17.3 \\ &2.382 \\ &10\left(2.382 - \frac{3000}{2060}\right) \\ &10(2.382 - 1.456) \\ &9.26 \text{ feet} \end{aligned}$$

This gives the actual deflection in feet. In order to convert this into minutes of angle, multiply by 12, which converts from feet to inches, divide by the number of inches sustained by one minute of angle, in this case 10.47, since the distance is 1,000 yards. The results then are:—*Front*, 11'03; *Right angles*, 10' 82, *Rear* 10' 62.

This example was specially worked out in order to show the difference between the effects of deflection of front and rear winds. It shows clearly that these differences are quite negligible in practice, so that only the lateral component of the wind need be taken into consideration in the connection. Also it follows that a wind at 30 degrees to the line of flight (1, 5, 7 or 11 o'clock) has practically half the effect of a wind of the same strength at 90 degrees (3 or 9 o'clock). The relative effects of winds at other angles can be readily found from a table of sines. A wind at 60 degrees to the bullet's line of flight would, for instance, have approximately seven-eighths of the effect of one of the same strength at 90 degrees.

This effect of the direction of the wind is important from the point of view of wind judgment as practiced in target shooting. A consideration of the previous paragraph will make it apparent that the effect of changes in the direction of wind will have a maximum importance when the wind makes only a small angle with the line of flight. Conversely, changes in the strength of the wind have most importance when the wind is nearly at right angles to the line of flight, and have less importance when it is nearly parallel to the line of flight. For practical purposes it may be stated that when the wind makes an angle of 60 degrees or over with the line of flight, such changes of direction may be ignored so far as their effect on wind deflection is concerned. The corresponding statement that small changes of strength, when the wind makes an angle of less than 30 degrees with the line of flight, may also be ignored does not, however, hold good to any thing like the same extent, although it is true that changes of strength are then of less importance than changes of direction.

That the Effect of a Cross-Wind is Proportional to

the "Delay" of the Shot and Not to the Time of Flight

By Maj. J. H. Hardcastle

IN a previous article, when discussing the problem of shelter of the range, it was mentioned casually as a well known fact that the effect on the bullet of a cross wind did not depend upon the time of flight, but on the *difference* between the time of flight over a given range on the earth, where there is air, and over the same range on the moon, where there is said to be no air. To give definite figures, suppose that the range is 500 yards, or 1,500 feet, and the bullet takes exactly one second to fly the distance, starting with 2,500 feet per second velocity. If there were no air, its speed would remain the same all the way (at any rate, in an ordinary flat trajectory), and the bullet would take 15-25ths of a second, or 0.60 second, to fly the distance. The delay due to the air is, then, 1.00—0.60 seconds equals 0.40 seconds. It is the size of this figure which must be considered when comparing the wind-cheating power of bullets. If the bullet of one sort of rifle is delayed 0.5 second over the range, it will want a greater allowance in the proportion of 5 to 4. That is the whole story, and the explanation is very simple. Before giving the explanation there is a pertinent and true anecdote to be told.

During the war there was an officer at Woolwich, Lieut. S———, employed at the range who took a good deal of interest in the figures connected with bullets. When he heard the above explanation he set himself down and worked out the deflection for a range of 500 yards for a Mark VII bullet with a full charge of 40 grains, a half charge of 20 grains, and an intermediate charge of 30 grains. The velocities obtained were about 2,500, 1,600 and 1,200 feet per second. He then turned up in triumph, and pointed out that his figures showed that the full and half charges would be blown the same distance by the wind, and that the 30-grain charge would be blown more, and, further, that this was obviously absurd—hence his joy! I had "been there" before, so I told him to choose a day with a big cross wind and go out and shoot the three charges and see for himself. When the great day arrived he fetched us all out on to the range to spifflicate the theory of delay. The result was that the full and half charges struck four feet to left of their proper zeroes, and the three-quarter charge struck a good half yard farther to the left.

He then climbed down and asked for the reason, and it was given him, as you will now be given it. Consider two trains running at 50 feet per second on parallel tracks 500 yards apart, and a firer and a target. There are three points to notice—

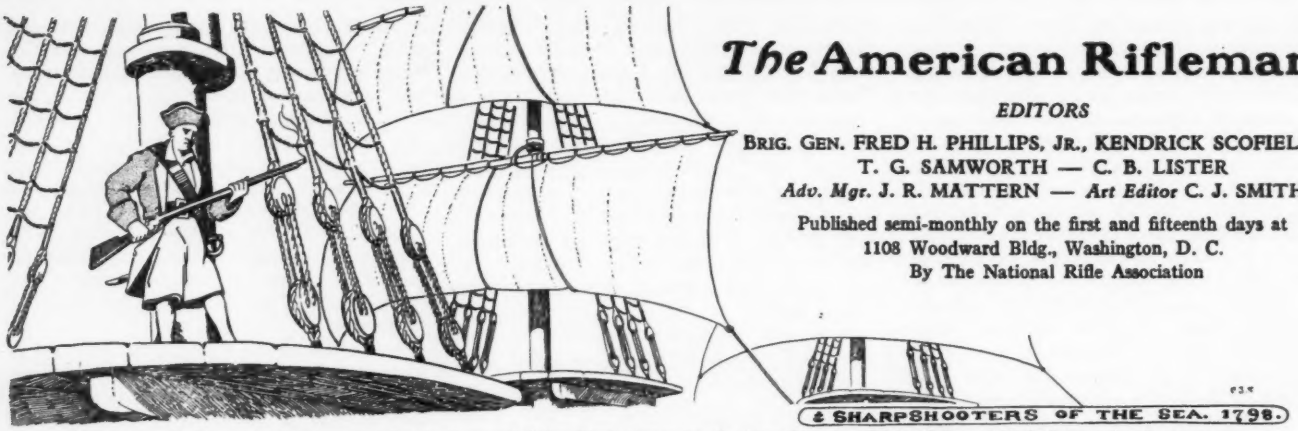
1. The firer in the train and target still;

2. The firer still and target on the other train;

3. The firer on one train and target on the other train.

All firing is done at right angles to the railway lines.

In the first case the firer has only to allow for the speed of his train, which is 1-50th of the bullet speed. His bullet will be projected from the train at an angle of 1 in 50 forwards, and he will have to allow 1-50th of the range, or 30 feet, for this if he wants to make sure of a bull. This 30 feet is obviously the "moon time," 0.6 seconds *(Continued on page 17)*



The American Rifleman

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Veterans and the sons of veterans who had served John Paul Jones in the Bon Homme Richard found little leisure in the eventuous days of the young Republic. Later these men served the guns, manned the yards and fought in the tops under Truxton in the Constellation off the Leeward Islands in 1800 and in 1812 under Perry and McDonough

DURING 1925 there are going to be several thousand new riflemen introduced into the match shooting game. Some of them will develop rapidly into remarkably good shots. Some of them will develop more slowly, but none the less steadily. All of them will find in existence a well organized system of team selections both for their local club teams, for state teams, and for international teams. In all probability, some of this year's group of riflemen will very shortly be turning in scores equal to, and in some cases higher than the old shooters who have represented the club or the state in matches for years past. When the selection of the 1925 teams comes to be undertaken, these newcomers will be carefully studied by the team officers. Some of them will be given their first chance to win their spurs. Few of them will, however, actually fire in important team events. To the newcomer flushed with his success, it may appear a little unjust. There may be some suggestion of favoritism in his mind when the team officials select some old-timer whose try-out score has been a few points lower than his.

Apprentice Riflemen

The shooting game, however, must follow the same rules that have been proved successful through the centuries of commercial development. In every craft, the apprenticeship system is recognized as essential. No matter how rapidly the apprentice may develop aptitude for his chosen line of work, he must serve the apprentice period to acquire that confidence in his ability to meet trying situations and unusual complications with which the old craftsman is familiar. The same is true of rifle team competitions. The promising tyro watched by his team officials is given every opportunity to take part in competition firing. He is thrown with the old team members as much as possible. His ability to absorb the team spirit is watched and developed.

But the spirit that makes a club team a state team or an international team cannot be developed in one year. The experience that makes a successful team shooter and gives him the confidence in his ability to produce under unexpected strain cannot be developed in one year. The rifleman, no less than other craftsmen, must spend his apprenticeship.

There is no more highly developed craft than that of the match rifleman, and there is no craft in which the period of apprenticeship is more important or will produce greater results. Believe, as you go along, that the suggestions which are passed along to you from the old timers are intended for your own good and are offered in the man-to-man spirit of frankness or friendly banter and without maliciousness.

* * * * *

HOMICIDE records are eagerly compiled by statisticians and are given wide publicity at the close of every calendar year. From these figures all sorts of conclusions are drawn, some logical and some quite absurd. Mostly they are used to bolster up the attempts of those fanatics who seek by anti-firearm legislation to disarm the citizenry of this country.

The Homicide Record

The latest crop of homicide statistics, giving the United States a ratio of 7.2 per 100,000 of population, will undoubtedly be seized upon as a sweet morsel and rolled under the tongues of sundry professional parasites of the reformer complex to prove the wisdom of enacting the anti-firearm measures now before Congress. Some legislators without further consideration may accept as a fact the erroneous conclusion that the ease with which lethal weapons are to be obtained accounts for the circumstance that the homicide ratio here is twice as great as in any other country. Therefore it is well further to scrutinize the homicide figures.

To those interested in marksmanship, it is at once apparent that the nations wherein shooting is practically a national sport show a much lower homicide rate than the United States where the percentage of shooters—men who are expected to be gun owners and users—is small compared to the entire population. In fact, the country where the most shooting is done and where every male citizen possess a weapon—Switzerland—is at the bottom of the list with 0.2 per hundred thousand. Norway, where shooting is popular, has a record of 0.8; while Italy, where shooting is also widespread but where one would normally expect a high killing rate, shows just one-half the record credited to the United States.

These figures should hold small comfort for the reformer who is trying to kill shooting on the grounds that the possession of firearms and skill in their use leads inevitably to manslaughter.

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The Telescope Sight

By J. W. Fecker

IN THE days gone by when the Schuetzen Fest was a real feast, the telescope sight was used mostly for target shooting, and a little for hunting. Since then the shooting game has made much progress, and the telescope sight has grown with it, until now, we have a set of highly specialized sights. There are scopes for hunting, for target shooting, and for sighting the various pieces of ordnance for both Army and Navy use.

Telescopic sights can be pretty definitely divided into three classes, the hunting scope, the target scope, and the military sight. The characteristics of the hunting and military sights are somewhat similar, but the target scope differs radically from either of these.

The hunting scope is a low power scope with a large field, and long eye relief. The hunting scopes vary in power from 2 to 4, and range in length from 3½ to 13 inches. They may be either of the prismatic, or straight lens erecting type. The eye relief will range from 2 to 3 inches, and the field will run anywhere from 35 to 75 feet at 100 yards.

The combination of long eye relief and large field calls for a scope with very large eye end. If to these requirements is added the one of large lateral relief, we must add a large objective end, and the resultant is like the German hunting scopes which resemble a double ended potato masher and weigh nearly as much as the rifle.

The prismatic scope, which can be made very short, compact, and with extremely large field, possesses many advantages, but its main drawbacks are its higher cost and difficulty of mounting. When properly mounted, and with a well designed optical system and internal adjustment for both range and windage, it is as near perfect as a scope can be made.

The majority of the hunting scopes have focusing arrangements for the individual shooter's eye, which is an absolute necessity, as unfortunately all eyes are not alike. There is however no focusing arrangement for range, which is not necessary in such a scope. The low power and general design is so chosen that the scope is practically universal focus from 50 yards on. These scopes are generally focused for no parallax at 75 to 80 yards. The amount of parallax present at other ranges is not sufficient to impair their effectiveness for hunting. Such a scope, however, is not suitable for target shooting, where shooting is at ranges as short as 50 feet, as the parallax can easily amount to 3 to 6 inches at 50 feet. The zeroing of these sights, which are usually mounted in a rigid mount, is accomplished by moving the reticule up or down for elevation, and moving the whole scope sidewise for windage. If very much verticle movement of the reticule is required the scope will show considerable parallax, due to the fact that these short scopes all have considerable curvature of field, and it is only at the center, that the plane of the crosswire touches the curved field. The curvature of field is within the limits of accommodation of the human eye, but is still great enough to show itself as parallax. If you have one of these hunting scopes, place it upon a box and sight it at a distant object with the reticule central. Move the eye across the field and note whether the reticule mark stays on the target. Now move the reticule halfway up and try this again. The result is surprising, for the whole works seems to float around. Now imagine yourself trying to shoot a one-fourth inch group with this on your rifle on the 25-yard range.

To construct a hunting scope in which the field is sufficiently well corrected to enable one to traverse a crosswire clear across the field without getting parallax, calls for a highly complicated and expensive optical system.

In a hunting scope due to its low magnification the image is very small, and a very fine crosswire would be required if one desired to try it for long range target shooting. In fact, in order to quarter the bull, one would need a finer wire than is at present obtainable commercially. A post of 0.004-in. diameter looks like a trolley pole when put into one of these scopes, and an aperture of the right size would be a dream to make. This is another reason why the purely hunting scope is not adapted to target shooting.

The target scope is a distinct and separate breed from the hunting scope. All that the two have in common is that they are full of lenses.

The target scope is considerably longer than the hunting scope, and much higher in power. The target scopes range in length from about 15 inches to the contraptions that are about a foot longer than the rifle, at least to all appearances. The target scope is primarily used for the same purpose as a surveying instrument, that is, accurately to lay out a line of sight. In order more accurately to set on the target, or to make small deviations for a given setting more accurately, a longer base line is required than for a hunting scope, and for this reason the target scope is longer. The usual practice is to set the mounts 7 3/16 inches between centers so that 0.001- inch gives a motion of approximately a half minute of angle. Many shooters prefer to place the mounts further apart to secure a more sensitive setting.

As a target scope is used to get the smallest possible groups, a focusing adjustment for range, as well as one for the individual shooter's eye, is required. In order to get the smallest possible group, parallax must be entirely removed, and this is a matter of focusing, and nothing else. The usual type of reticule used in target shooting is the crosswire type. The lower the magnification, the finer the wire must be if the shooter wishes to quarter the black, and, conversely, the higher the power the larger the crosswire can be without covering the black. A coarse crosswire is somewhat easier on the eye than a very fine one, and this is one reason why a high power scope is easier on the eye. A target scope should have focusing adjustment for the individual shooter's eye, so that he can focus the crosswires to suit his eye. The finer the crosswires, the more carefully the eyepiece must be focused to prevent fade-outs, and the coarser the wire, the easier it is to focus the eyepiece correctly. Once the eyepiece is correctly focused there is no occasion for further change here.

The magnifications of the target scopes will lie between 4 and 16, occasionally one sees one of higher power, but its *raison de etre* I do not know, nor can imagine. A magnification of ten to twelve at the most, with a good sized objective will show one all that it is necessary to see in target shooting. The field in a target scope does not need to be large, the target being stationary.

A low power scope, such as four or five, can be readily made with a large field, in sufficient length and have range focusing adjustment added, so that the scope can be used either for hunting or target shooting.

The military telescope sights vary in size from the sniping sights for the Springfield, up to the two- and three-inch telescopes for use on the big Army and Navy guns.

The sniping scopes for the Springfield are of low power, usually 2.5 to 2.75, with a field of 40 to 50 feet at 100 yards, and a length of 10 to 11 inches. They are mounted rigidly and have internal adjustment for range.

The scopes used on the lighter field guns are usually four-power, with a field of about 51 feet at 100 yards, and are of prismatic construction. They are equipped with angle measuring and setting devices in both azimuth and elevation.

For use on the big guns, such as are used for coast defense and Navy, the scopes are heavy and very strongly constructed. They have an objective of two- or three-inch diameter and usually eight-power. Occasionally ten-power is used. High illumination and moderate size of field are the main features desired. The crosswire type of reticule is almost universally used in the military sights.

With the increasing use of aeroplanes for warfare, the sights become more and more complex, so that the aviation sights are equipped with range, altitude, time of bullet's flight, and other predicting devices.

The bombing sights used on aeroplanes for sighting for dropping bombs, are highly complex affairs, and to use them the aviator must be a combination of engineer, mathematician, scientist and good guesser. What the telescope sight will be in another generation one would be indeed rash to foretell.

The Club Finances

By R. E. Herrick

THE old saying that "a chain is no stronger than its weakest link" is fully as apt when applied to the financial end of a rifle club, and in ten or twelve years of observation from the viewpoint of a club officer and also as state secretary I am more firmly convinced than ever that the financial end of a club's existence is its weakest link.

Applications from would-be clubs, as you know, are sent to the state secretary for his approval before being transmitted to the state adjutant general. I have been tempted time after time to return the application of a club when on looking in the proper spaces for their insertion, note the initiation fees are nil, and the annual dues average somewhere around one dollar.

Examination of the names of the officers of nearly every club reveals the fact that in almost every case one or more are professional men, and why in the name of all that's holy can anyone having the brains a professional man is usually credited with having conceive of a real active rifle club operating a whole year, paying freight on ammunition, paying for pit service, printing and stationery, targets, and the thousand and one little lone simoleon, is so far beyond my poor understanding as to be utterly incomprehensible. Talk about stretching a dollar. If I could operate my household on that plan then Christmas and tax time would send no chills up and down by backbone.

When such an application is put up to me for my approval I am frequently tempted to return it for revision, as such a club is almost certainly doomed to failure, and in order that new clubs already affiliated and others as yet unborn may be warned I write these lines.

Consider for a moment that the government offers: Rifles, target carriers, ammunition, markers, targets for indoor and outdoor practice, pasters, target cloth, etc., which in a couple or three years in the case of a large club may represent hundreds of dollars. And for the privilege of using all this the club member is perfectly willing to separate himself from the whole sum of one dollar. Not one dollar per month, or per week, but one dollar per year. Say the club is located in anything like favorable country they can have at least 25 shoots per season outdoors, where the members may fire anywhere from ten to forty or more shots per day. Say 25 shoots for the season. That, according to a rather difficult mathematical formula that we use, makes exactly four cents per shoot the club member is willing to pay for the privilege of shooting up ammunition that would cost from one to four dollars right out of the store, and the gun thrown in without rental. Yes, the Americans are good sports!

Now that we have reduced our boiler pressure to somewhere a normal working pressure, let's look for the answer.

The Boise Military Rifle Club was organized by the writer in 1914. We started out with, as I remember, $1 initiation fee and $1.50 per year dues. We struggled along with varying success, using individual members in the pits, which said individual members were usually some of the club officers. This pleased said club officers, being with us considered as a high honor the privilege of going into a concrete pit up against a sand hill with the thermometer registering 105° in the shade and no shade, and being permitted to mark targets for a couple or three hours, and then just as the shoot broke up to have someone telephone in to have us come out and shoot. Being invited to shoot as well as allowed to mark targets was almost too much. Our gratitude was almost dog-like—mad dog like. For this reason the annual election always resulted in such an avalanche of candidates as to well nigh simulate a riot—I don't think.

Our club had at one time something like 110 members, but I am sorry to say a lot of these joined the club merely for the purpose of being allowed the privilege of purchasing an Army rifle, for which in this part of the country there is considerable use.

For the first couple of seasons we endeavored to keep track of each cartridge issued to every member. No ammunition was issued except on shooting days and at the range. Popular? Of course. Who wouldn't like to shoot free ammunition that one could get by merely paying a measly $2.50 for a whole year. But keep track of it we couldn't. In spite of our vigilance the ammunition would evaporate, and after entering the gaseous state would again regain its solid form somewhere out in the hills, and many is the jack rabbit, yes. and coyote and deer too that might have testified to the material nature of that once evaporated and later rejuvenated ammunition.

Nevertheless we were learning all this time. Came a day when something had to be done or the club evaporate as did so much of our ammunition. We tried to vote to raise the dues. We did. Got it raised to $1.00 initiation fee and $2.50 dues. Not much in that. So it was up to the club officers, and this is what we did. Established a rule that every time a member showed up on the range he was to pay a range fee of 25c. If he wanted a bandoleer of ammunition he was obliged to put up a cash bond in the amount of $1.00, which bond was declared forfeited if the ammunition was not returned at the end of the day.

That proved to be the oil on our troubled financial seas. We found that forfeited bonds were sufficient to pay pit boys, freight, buy targets, stationery, etc., and left us the 25c range fee as clear profit, so we made a separate fund of these range fees and deposited them in the savings account at the bank to apply on a clubhouse. This little fund grew, and later we found we could also add our $1.00 initiation fee to this fund. We bought badges and trophies, including a large plaque and still found a surplus in the treasury, so at various times we transferred from $50 to $100 from the general treasury into the clubhouse fund, until at the present writing we have over $600 in this fund as well as a goodly balance in the cash account, and property that will inventory several hundred dollars. By next fall our clubhouse fund will likely total about $800, at which time we expect to start our building. We have several tracts of land in view now, and after paying for the land we shall have several hundred dollars left to start the building. Chances are we shall call on the club members to donate a day or two in the way of a "house-raisin'." Our club is now incorporated under the name of the Boise Rifle & Pistol Club, and is on a sound, business-like basis, and with the ground paid for and building started we can borrow from the building and loan company enough to complete it. We intend this building to be a clubhouse and indoor range combined, and after its completion we feel we shall have a good drawing card for more members. I might also state than ours is not a large club. Our average membership stands around fifty members per year. This should be considered in making comparisons.

Not the least important part of our present policy is that no one feels that he is getting something for nothing and on that account just squib away a lot of free ammunition. It has been our experience that no one really appreciates getting the ammunition free, and if he knows it is coming out of his own pocket he is much more conservative, and (mark this) he is much more likely to make every shot count than he otherwise would.

Our future plans are these. After our clubhouse is built and paid for we expect to still keep up our present policy of financing, and the surplus will come in mighty handy in buying range scopes, good serviceable telephones, etc., and as well enable us to carry a small stock of riflemen's supplies to be sold to club members—at a profit. If we become too affluent it is always possible to endow a hospital or college or something, but I'll warrant we find use for the money.

Now there is nothing at all in the above policy that could not be adopted by the poorest (financially) club. The Boise club is, I believe, much like the majority of clubs, composed of a mixture of good citizens of all ranks, doctors, lawyers, bakers, and candlestick makers, and if one member wishes to shoot twice as much as someone else he knows it will cost him in proportion.

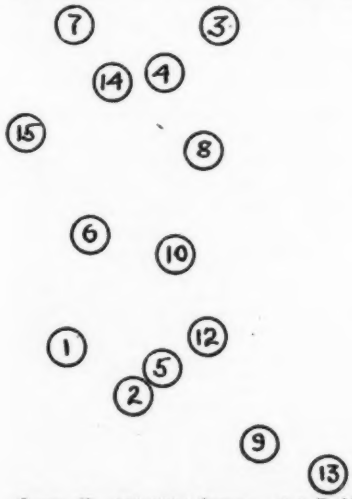
And so this is my earnest plea to new clubs. Don't expect to operate without funds, and of necessity these funds must come out of the individual mem- *(Continued on page 17)*

Resting the Rifle

(Continued from page 6)

the muzzle rest group three-quarters on an inch still higher. But the centers of all the 15 shots from this rifle with this reduced load at 100 yards can be contained within a circle 2 inches in diameter. Incidentally this particular reduced load has been the most accurate load up to 100 yards that I have ever fired from strictly factory made rifles. It has performed wonderfully in a very large number of rifles, and has never performed other than wonderfully. Certainly in this case the sportsman would not be missing much due to his manner if resting his rifle. Incidentally Dr. Mosteller was doing some mighty good aiming and holding. The rifle was equipped with a Marble No. S-20 receiver sight and gold bead front sight.

.250-3000 Savage High Power.—This was the standard Savage bolt action rifle with very light 22-inch barrel. The ammunition was hand loaded, 33½ grains du Pont No. 16 powder and Western 100-grain open point bullet. This rifle was chosen because according to one writer's ideas it should give the



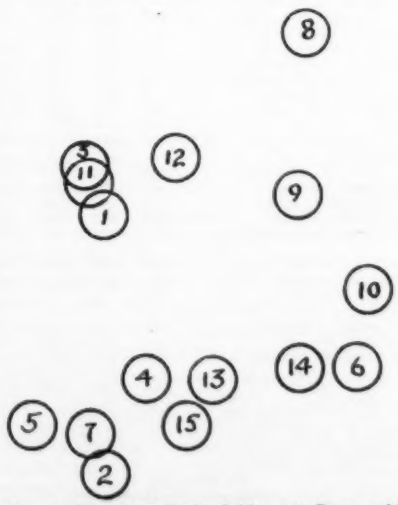
Group II—.250-3000 Savage. 1-5 Padded rest at balance. 6-10 Muzzle rest. 11-15 Prone with gunsling.

maximum difference due to the way it was rested "scattering all over a 24-inch circle at 100 yards," and according to my experience there should be almost no difference in the various points of impact. This rifle was shot at 100 yards by its owner, Dr. R. Mosteller of Columbus, Georgia. As shown by the target above there was practically no difference in the centers of impact obtained in the three ways of firing. Discarding one shot which was pulled to the right, all these shots fired in the three ways are contained in a circle 3.1 inches in diameter, not so bad for any rifle fired in one way alone. This experiment seems to support our contention that with a very high velocity rifle different methods of holding and resting have no practical effect on the center of impact, even when the barrel is extremely light.

.30-06 Springfield Sporting rifle.—Rifle had the usual sporting type of stock, regular weight Springfield barrel, and Lyman No. 48 rear sight. 1922 National Match ammunition was used. M. V. 2,700 f. s. Shot at 100 yards by Sergeant Ioerger one of the best shots on the experimental range at Fort Benning. There was practically no difference in the centers of impact of the three groups as shown above. All 15 shots could be contained in a circle 2.9 inches in diameter. I have conducted similar experiments many times with a number of Springfield sporting rifles. Various ways of resting the barrel apparently cause no appreciable variation in the location of the centers of impact.

I could theorize a lot in an effort to explain why resting the barrel in various ways should effect the location of the center of impact slightly with low velocity rifles, and none at all, or scarcely none with the higher velocity weapons. But this article deals with hard cold facts and actual results, and I prefer to say that I don't know the cause or explanation. I fear that some writers have given too much weight to one or two experiences many years ago with old black powder weapons, and have assumed without trial that the same conditions must pertain today, and even to a greater extent, with our light, very heavily charged rifles. But such is not the case. Truly we gain a lot by increasing the velocity—flat trajectory, greater accuracy, greater killing power sometimes, and as we found when we turned from the Krag to the Springfield, we can come pretty near throwing our thermometers, barometers and hygrometers away. Now we realize that the position from which we fire has no effect. Pretty soon we shall be able to eliminate both elevation scale and wind gauge.

I feel that some other reasons must be given for turning down the featherweight rifle. Such a weapon may, in some respects, be decidedly inferior to a heavier and longer barrelled rifle, but we must also remember that the man with the little gun will often reach the point from which he has to fire in much better physical condition than if he lugged a cannon, and thus be able to make a better hit. Personally, being rather big and husky, I have never had much use for the featherweight rifle. My favorite hunting rifle which I have used almost exclusively for the past fifteen years has a 26-inch barrel and weighs 9¼ pounds. But I know many men who would be very foolish to carry such a big and heavy rifle in rough country.



Group IV—.30-06 Springfield. 1-5 Prone with gunsling. 6-10 Padded rest at balance. 11-15 Muzzle rest.

Looking Ahead

(Continued from page 1)

thing a little better is developed. The firing mechanism of the Springfield rifle was improved considerably this past year and lessons were learned which permit of its further perfection before the sailing of the 1925 team. The selection of the personnel for the International Free Rifle Team has admittedly not yet been systematized to the extent that the N. R. A. and all riflemen would desire it to be. This condition has been largely due to the inability to secure definite information relative to appropriations available for the purpose sufficiently in advance to permit of the full development Corps Area try-out system. The cooperation of the War and Navy Departments in extending range facilities for these try-outs has always been all that could be desired, and it is to be hoped that this year advance information relative to available appropriations will be in the hands of the authorities in time to take full advantage of the Corps Area try-out scheme.

The entire international team problem, in so far as shooting members of the various teams is concerned, of course, reverts to the successful operation of civilian and college rifle clubs where the riflemen are developed. The intercollegiate rifle shooting situation is the most favorable that it has ever been. There will be more intercollegiate rifle competitions and more recognition of rifle shooting as a minor or major sport on the part of the colleges and universities during 1925 than has ever been the case before. The N. R. A. is extending this field of its activities as rapidly as possible. The assistance in the organization of an intercollegiate rifle Association of N. R. A. clubs last year was a most important step in the development of intercollegiate activities. This intercollegiate association, acting in an advisory capacity to the N. R. A., has rendered invaluable aid in the planning of programs and the arrangement of league or conference schedules of a nature to appeal to the undergraduate shooters. Through the medium of this Intercollegiate Rifle Association, hundreds of new shooters of the highest type will be introduced to the rifle game this year. The impulse which rifle shooting will receive in the major colleges and universities will inevitably be felt in the high schools, as the high school student is always interested in those sports pursued actively at the universities.

Civilian rifle clubs will find that they receive more cooperation from the N. R. A. during the coming year than it has been pos-

sible to render them heretofore. The first step in this direction was taken last year when every rifle club secretary was placed on the mailing list of THE AMERICAN RIFLEMAN, and a section of the magazine was devoted exclusively to the activities of local clubs and state associations. The present schedule for THE AMERICAN RIFLEMAN calls for a series of articles dealing with the fundamentals of rifle and pistol shooting and of range operation. These articles will be prepared and published with the idea in mind that several thousand new shooters will become acquainted with the Association for the first time during 1925. A great many of these new men will be absolute tyros to the match shooting game and some of them will be almost perfect strangers to any type of rifle shooting.

The policy of service to the American shooter will be foremost in the minds of the staff of the magazine and of the Association throughout the year. The sales service of the Association will be developed to the fullest possible extent in order to permit new comers to obtain good equipment with the minimum outlay of money. It is felt that in following this policy the Association is not competing with the dealers handling firearms, but is actualy assisting them by unearthing and developing new sportsmen and new shooters, all of whom must inevitably go to their local dealer for the majority of supplies that they need.

No organization can stand still. It must either go forward or backward. The conclusion of the year 1925 will find the American shooting fraternity as represented by the N. R. A. and THE AMERICAN RIFLEMAN at a new high peak in the estimation of the people of the United States, or it will find it on the down grade. The result is of course in the hands of the American sportsmen. If they want this country represented in the international shooting classics; if they want their right to possess and learn how to use firearms protected; if they want knowledge of the proper handling of guns spread among the generations in the high schools and colleges, they will show it by banding themselves together under the insignia of a national organization which is in a position to do all these things, provided it is given their active support.

The individual membership roll of the Association and the subscription list of THE AMERICAN RIFLEMAN have shown a steady increase during the past three years. Even so, it is pitifully small when compared with the total number of the shooters and of patriotic Americans who believe in the training of shooters. The reason for the discrepancy is usually the ignorance of the country as a whole of the work that is to be done and that is being done. It will be the privilege of THE AMERICAN RIFLEMAN to spread this word as broadly as possible during the year, but the real extension work must, as always, be done by those individuals who have the good of the game at heart.

1925 will be the most momentous year in the history of the shooting game in this country. That means that it can be made the prize year, but if this end is to be achieved, the cooperation and support of every shooter must be enlisted. The National Rifle Association and THE AMERICAN RIFLEMAN stand pledged to do all that can be done for the shooter. It is up to the shooter to do all that he can for the National Rifle Association and for THE AMERICAN RIFLEMAN.

The Pan-American

(Continued from page 5)

19. Max Alfaro	40	283
20. Juan E. Zegarra	39	236
Totals	787	6053

Kneeling

1. Sidney R. Hinds	40	351
2. Morris Fisher	40	350
3. Jose F. Guido	40	350
4. G. Santa Maria	40	349
5. Max Alfaro	40	349
6. Gustavo A. Cuervo	40	346
7. George A. Rehm	40	344
8. Reymond E. Coulter	40	341
9. Eugenio Andino	40	339
10. Pedro Roca	40	339
11. Juan Mastino	40	335
12. Armand M. Morgan	40	333
13. Miguel Navarro	40	333
14. Ambrosio Diaz	40	332
15. Willy Kirchoff	40	332
16. Adolfo Arana	40	327
17. Abelardo Rico	40	324
18. Jorge del Mazo	40	316
19. Juan E. Zegarra	40	310
20. Jose Froeletz	40	304
Totals	800	6704

Prone

1. Sidney R. Hinds	40	370
2. Morris Fisher	40	370
3. Reymond E. Coulter	40	370
4. Armand R. Morgan	40	368
5. George A. Rehm	40	366
6. Miguel Navarro	40	366
7. Ambrosio Diaz	40	365
8. Eugenio Andino	40	362
9. G. Santa Maria	40	360
10. Max Alfaro	39	358
11. Gustavo A. Cuervo	40	355
12. Jose Froeletz	40	355
13. Juan Martino	40	350
14. Willy Kirchoff	40	350
15. Jose F. Guido	40	349
16. Abelardo Rico	40	346
17. Adolfo Arana	40	340
18. Pedro Roca	40	340
19. Juan E. Zegarra	40	340
20. Jorge del Mazo	40	336
Totals	799	7116

INTERNATIONAL MATCH
December 9, 1924

United States Team	Std.	Kn.	Prn.	T'tl
1. Sidney R. Hinds	313	351	370	1034
2. Morris Fisher	313	350	370	1033
3. Armand M. Morgan	327	333	368	1028
4. George A. Rehm	305	344	366	1015
5. Reymond O. Coulter	302	341	370	1013
Totals	1560	1719	1844	5123
Cuban Team	**Std.**	**Kn.**	**Prn.**	**T'tl**
1. Miguel Navarro	330	333	366	1029
2. G. Santa Maria	297	349	360	1006
3. Gustavo A. Cuervo	304	346	355	1005
4. Eugenio Andino	307	339	362	1000
5. Amorosio Diaz	293	332	365	990
Totals	1531	1699	1808	5038
Argentine Team	**Std.**	**Kn.**	**Prn.**	**T'tl**
1. Jose J. Guido	318	350	349	1017
2. Juan Martino	324	335	350	1009
3. Abelardo Rico	324	324	346	994
4. Adolfo Arana	295	327	340	962
5. Jorge wey Mazo	300	316	336	952
Totals	1561	1652	1721	4934
Peruvian Team	**Std.**	**Kn.**	**Prn.**	**T'tl**
1. Max Alfaro	283	49	...	....
2. Pedro Roca	304	...	...	983
3. Willy Kirchoff	290	332	350	972
4. Jose Froeletz	288	304	255	947
5. Juan E. Zegarra	336	310	340	886
Totals	1461	1634	199	4778

The following are the detailed scores of this match which closed the competition with the triumph of Martino.

MATCH NO. 3
Unlimited Re-Entry

Conditions same as Match No 1 for the Visitor's Cup, open to anybody, best 30 shots in three positions. Possible 300 points.

Place Name Country	Score
1. Juan Martino, Argentina	286
2. Lieut. S. R. Hinds, U. S. A.	286
3. Abelardo Rico, Argentina	285
4. Armand M. Morgan, U. S. A.	283
5. Willy Kirchoff, Peru	281
6. Morris Fisher, U. S. A.	279
7. Raymond O. Coulter, U. S. A.	277
8. George A. Rehm, U. S. A.	276
9. Stephen D. Monahan, U. S. A.	275
10. Pedro Roca, Peru	273
11. Max Alfaro, Peru	272
12. Jose Froletz, Peru	271
13. Pablo C. Toledo, Peru	271
14. John H. Knuebel, U. S. A.	270
15. Juan E. Zegarra, Peru	269
16. Guillermo Santa Maria, Cuba	275
17. E. C. Crossman, U. S. A.	265
18. Calvin A. Lloyd, U. S. A.	263
19. Gustavo Alfonso Cuervo, Cuba	254
20. Eugenio Andino, Cuba	253
21. Raymond E. Vermette, U. S. A.	251
22. Ambrosio Diaz, Galup, Cuba	250
23. Antonio Guntin, Cuba	242
24. Manuel Villada, Cuba	240
25. Angel Santa Maria, Peru	210

MATCH NO. 4
Limited Entry

Two best strings of ten shots prone, 300 meters, reduced aiming bull, international target. Limited to ten srings.

Place Name Country	Score
1. George A. Rehm, U. S. A.	194
2. Stephen D. Monahan, U. S. A.	193
3. Calvin A. Lloyd, U. S. A.	188
4. Raymond E. Vermette, U. S. A.	188
5. Raymond O. Coulter, U. S. A.	186
6. Armand M. Morgan, U. S. A.	186
7. John H. Knuebel, U. S. A.	185
8. Joseph Jackson, U. S. A.	183
9. Sidney R. Hindes, U. S. A.	183
10. Eduardo B. Aguirre, Peru.	183
11. Morris Fisher, U. S. A.	182
12. Genaro Rivero, Peru	177
13. Max Alfaro, Peru	176
14. Gonzalo Higueras, Peru	176
15. Angel Santa Maria, Peru	175
16. Juan Pancorvo, Peru	172

This match was a match between the riflemen of Cuba and the United States. It ended with a triumph for the Olympic rifleman Morris Fisher who has been awarded the cup given by Mr. John W. Garret. The best results in this match are as follows:

VISITOR'S CUP MATCH
Unlimited Re-Entry

For a cup presented by the United States' minister to Argentina in 1912. Best ten shots in each of the standing, kneeling and prone positions, total 300 shots fired in five-shot series, unlimited re-entry. Open to visiting nations only. Possible 300 points. Target international, 300-meter (328 yards), four-inch ten ring, 24-inch five-ring and aiming black.

Place Name Country	Score
1. Morris Fisher, U. S. A.	282
2. Raymond O. Coulter, U. S. A.	279
3. E. C. Crossman, U. S. A.	279
4. Stephen D. Monahan, U. S. A.	277
5. Sidney R. Hinds, U. S. A.	277
6. George A. Rehm, U. S. A.	276
7. Ambrosio Diaz Galup, Cuba	274
8. Miguel Navarro, Cuba	273
9. Gustavo Alfonso Cuervo, Cuba	270
10. Calvin A. Lloyd, U. S. A.	269
11. Armano M. Morgan, U. S. A.	267
12. Joseph H. Knuebel, U. S. A.	265
13. Antonio Guntin, Cuba	264
14. Guillermo Santa Maria, Cuba	263
15. Raymond E. Vermette, U. S. A.	256
16. Joseph Jackson, U. S. A.	251
17. Manuel Villada, Cuba	249

MATCH NO. 2

Carton or Maestro Tiradores Match

Course, 100 shots, fired within 48 hours. Target, international. Carton—all of target included within seven ring, or 16-inch circle. Position, any. Medals for most cartons, and for most points. Carton ties settled by the most 10's. Any man making 85 cartons out of 100 shots, proclaimed a Maestro Tirador.

Place Name Country		Score
1. George A. Rehn, USA	100	933
2. Raymond E. Vermette, USA	100	932
3. Stephen D. Monahan, USA	100	919
4. Manuel Villada, Cuba	100	914
5. Antonio Guntin, Cuba	100	913
6. Miguel Navarro, Cuba	100	911
7. Calvin A. Lloyd, USA	100	909
8. Ambrosio Diaz, Cuba	100	908
9. Armand M. Morgan, USA	100	908
10. Eugenio Andino, Cuba	100	906
11. Morris Fisher, USA	100	905
12. Joseph Jackson, USA	100	903
13. Jose Prolets, Peru	100	900
14. Willy Kirchoff, Peru	100	900
15. John H. Knuebel, USA	100	898
16. Max Alfaro, Peru	100	896

17. E. C. Crossman, USA	100	887
18. Jose J. Guido, Cuba	100	887
19. Raymond O. Coulter USA	100	885
20. Guillermo Santa Maria, Cuba	100	884
21. Angel Santa Maria, Peru	100	878
22. Abelardo Rico, Argentina	100	877
23. Alberto Gandia, Cuba	100	876
24. Antonio Daneri, Argentina	100	871
25. Gustavo Alfonso Cuervo, Cuba	100	868
26. Pablo C. Toledo, Peru	100	876
27. Pedro Roca, Peru	99	860
28. Adolfo Arana, Argentina	100	859
29. Jorge del Mazo, Argentina	100	857
30. Juan Martino, Argentina	100	843
31. Enrique Brenner, Peru	100	843
32. Armando Va, Argentina	100	841
33. Oscar Chavez Tafur, Peru	100	834
34. Pedro Rodo, Peru	100	834
35. Sabino Tejeda, Peru	100	833
36. Guillermo Burguer, Peru	100	824
37. Adelmi Ruiz, Columbia	99	812
38. Daniel Cancourt, Peru	100	810
39. Euglogio Pena, Peru	100	805
40. Juan E. Zegarra, Peru	100	802
41. Juan Almeida Freitas, Brazil	99	779

Each competitor had a score of 100 cartons (bull's-eyes) counting from 10 to 8. The seven made in this match made a wonderful record in the life of international sport. The results in points have been most excellent, the first man having 933 x 1000.

There have been classified 41 shooters as follows:

1. George A. Rehm, USA	100
2. Raymond E. Vermette, USA	100
3. Stephen D. Monahan, USA	100
4. Antonio Guntin, Cuba	100
5. Manuel Villada, Cuba	100
6. Miguel Navarro, Cuba	100
7. Calvin A. Lloyd, USA	100
8. Ambrosio Diaz, Cuba	100
9. Armand M. Morgan, USA	100
10. Eugenio Andino, Cuba	100
11. Joseph Jackson, USA	100
12. Jon H. Knuebel, USA	100
13. Max Alfaro, Peru	100
14. E. C. Crossman, USA	100
15. Jose J. Guido, Argentina	100
16. Raymond O. Coulter, USA	100
17. Alberto Gandia, Cuba	100
18. Gustavos Alfonso Cuervo, Cuba	100
19. Morris Fisher, USA	99
20. Jose Froeletz, Peru	99
21. Willy Kirchoff, Peru	99
22. Guillermo Santa Maria, Cuba	99
23. Abelardo Rico, Argentina	99
24. Pablo C. Toledo, Peru	99
25. Angel Santa Maria, Peru	98
26. Antonio Deneri, Argentina	98
27. Juan Martino, Argentina	98
28. Pedro Roca, Peru	96
29. Adolfo Arana, Argentina	96
30. Jorge del Mazo, Argentina	96
31. Sabino Tejeda, Peru	96
32. Armando Va, Argentina	93
33. Guillermo Burguer, Peru	93
34. Enrique Brenner, Peru	93
35. Pedro Rodo, Peru	92
36. Juan E. Zegarra, Peru	92
37. Oscar Chavez Tafur, Peru	90
38. Daniel Dancourt, Peru	89
39. J. Almeida Freitas, Brazil	88
40. Adelmi Ruiz, Columbia	88
41. Euglogio Pena, Peru	87

Those of the delegates who took part but have not been qualified are the following: S. R. Hinds, etc.

The results which have been made in this match are as follows:

Peru	14
United States	10
Cuba	8
Argentina	7
Columbia	1
Brazil	1
Total	41

Jinx

(Continued from page 2)

quite a lot of sand in the muzzle. Not wishing to clean and refoul I cut a patch in half in order to have one that would fit very loosely, this I carefully pushed through the bore thinking to push out the sand without disturbing any of the powder fouling or grease. When it came my turn to shoot I got off my two sighters apparently O. K. Made the necessary correction from them and fired my first record shot. *No 39s first shot for record is a missss!*

If you have ever fired thousands of rounds at the C-5 target without getting such a thing as a miss you will appreciate my feeling about that time. After challenging the shot and finding it at 12 o'clock just off the paper I decided that it must be the fault of the ammunition and so I fired another shot and got another miss, this time at 8 o'clock about twenty inches from center. This convinced me that it was not ammunition so I left the firing line and cleaned and fouled the rifle, then going back and without any sight changes other than I had made previous to getting the two misses I finished clean at 175, and later dropped one at 200.

As I recall this match had I shot bad enough to get two fours in place of the two misses I would have won that match, and I could have dropped five points in that match and still have won the grand aggregate, but the two misses gave the Jinx the laugh on me and added materially to my fund of match experience.

Moral, if you must play with the inside of your barrel in the middle of a match make a thorough job of it.

The Club Finances

(Continued from page 14)

ber's pocket. If not in bulk then piecemeal, which really hurts much less. I believe it is easier to hold members if the dues are $2.50 to $5 and then charge a small range fee, and charge for the ammunition than it is to charge $10 to $25 yearly dues, although at the end of the year it will amount to practically the same thing, but it hasn't hurt so much. Money makes the mare go, and a live rifle club can accumulate lots of expenses.

A Correction

There are a few minor errors of omission and commission in the article "Light, Telescopes, and Refraction," by E. E. Dittbrenner, which appeared in the December 1 AMERICAN RIFLEMAN:

On page 4, column 3, first paragraph down: Should read, "To illustrate: In an observation on the sun (according to the Nautical Almanac) at six o'clock in the afternoon *or morning* in latitude 40 north, *June 15th*, we must correct our observation nearly 2¼ minutes of arc for refraction. There are, of course other things entering into an observation of this kind which will be disregarded or are non-existent in light rays approximately parallel to the earth's surface. . . . The amount of bending will depend on the amount of air traveled through (by the light ray), *which in itself depends upon the angle at which the light ray enters the earth's air envelope.* This will be greater at six o'clock, (either morning or evening) than at noon *or midnight.* Hence the time of day *and year* is important there but not in shooting, where only temperature is the influencing factor." Italics are corrections.

Effect of a Cross-Wind

(Continued from page 11)

multiplied by the wind speed, 50 feet per sec.

In the second case the firer has to allow for the distance traveled by the target in the actual time of flight, the "earth-time," and this is 1.0 second multiplied by 50 feet per second, or 50 feet.

In the third case we have the same thing as a cross-wind, only the effect is produced by moving the gun and the target at equal speeds through still air, instead of moving the air past still objects. To solve the problem it is only necessary to combine the answers of the two preceding ones. 30 feet behind and 50 feet forward allowance give a total of 20 feet actually wanted, and this 20 feet is the wind speed 50 feet per second multiplied by the difference between the earth-time and the moon-time, 1.0—0.6 equals 0.4, and 0.4 times 50 equals 20. So that the full answer is wind-speed multiplied by delay. There is no trick in the answer. It is a simple statement of elementary facts. It is clear, therefore, that wind allowance reckoned in feet does not depend upon muzzle velocity, or on range, or on time of flight, but solely upon the speed of the wind and the *extra* time of flight imposed on the bullet by its passage through a resisting medium. If there was no air there could be no wind effect, for the which some of us would often be glad, if only we could breathe.

Let's Hear More About This?

By Don Baker

A few days ago I was talking with a certain maker of rifle barrels and he advanced a theory that was new to me and on which I should like actual facts if such are to be had.

In his opinion the average .22 caliber rifle barrel is longer than it need be for the following reasons: First, that the powder charge is all burned, and resultant energy all developed in say the first 18 or 20 inches of barrel length. He also claims that due to the latter result that adding to a barrel's length does not add to muzzle velocity, and furthermore in his opinion the bullet lubricant is used up before the bullet reaches the muzzle of guns of say over 28 inches length, and for that reason the longer gun may prove to be much less accurate than the one having a shorter barrel.

If his theory is correct, then the only logical reason for a long barrel would be to increase the sight radius, or to produce a gun which was muzzle heavy. When telescope sights were used exclusively, the shorter barrel would answer every purpose.

What I am particularly interested in knowing is just what effect length of barrel has on muzzle velocity as applied to the .22 caliber long rifle?

Conducted by C. B. Lister

What Is the Matter With Our Rifle Clubs?

YES, what is the matter? We hold our annual meetings, elect our officers, and make our program for the season. Everybody is full of pep and telling each other what they are going to do in the shooting events of the season.

Now that the program is made and the entry fees are fixed, they sit around the house in front of the fire waiting for the outdoor season to begin. Soon comes May. Then Saturday their first big shoot. There is a large attendance, prizes 40, 30, and 30 Lewis class system. Freeling takes first, Dope James and Jack Carry take second and third.

The second shoot comes and goes, then the third, fourth, and the fifth. We notice our attendance is dropping off. At the end of the season there is only a handful left and nine times out of ten they are the club's best shots. Why? Because we have club membership competition

The best shots of the club are walking away with all the first *prizes*. The second and third are nothing more than a raffle under the Lewis class system, because a man may shoot just good enough to lose and not good enough to win. These men are *the goats of all rifle clubs*. They soon get discouraged and drop out because they are shooting in the same old rut all the time and don't seem to be able to do any better. You cannot handicap a man just because he won a shoot at a given range. If you do he won't be there the next time that same shoot comes around. *WHY?* Because he feels that he has no chance with his handicap against a man who shoots just as good as he does. That is what is wrong with our rifle clubs today—*MEMBERSHIP COMPETITION*.

This bad effect can be all avoided and still have competition if handled in the right way, and what is more valuable to a club than lots of shooters?

I will try and explain my version of how this can be done. The Secretary is the man that can turn the trick if the boys will only back him. He has the records of all the members' shooting and will place them in *Classes* by average, as follows:

95% or better.....Class A 90% to 94%..... Class B
87% to 89%..... Class C 84% to 86%..... Class D
80% to 83%..... Class E

Now the club has five classes of shooters for all kinds of shooting. The Secretary will issue a challenge to some other club stating "we would like to shoot you fellows a match in A, B, C, or any class that you want!"

This is the Right Kind of Competition

Competition in this manner will have a good effect on your members as follows. We have a club of shooters with nothing to lose, but everything to gain. Every man has his club at heart with the point in view to make it the best that he knows how. The high guns of the club have a little more time to help each other, instead of beating each other. They look around the camp to see what is really wrong with some of the boys that they are not doing better. The fellows are not in the right position, or it may be the sling strap is too long or too short, or maybe the trigger squeeze is not right—any number of things that will hold a shooter back through lack of knowledge of the game. Because he is shooting *with* them, and not against them, your expert sets about correcting these faults. It is his club, he is proud of his club, and is going to make it the best that is. On the other hand, the brother shooter who is being helped in this way will see his scores gradually improve and when that is once started, all Hell can't stop him or keep him away. *Why?* We have no membership competition, nothing to interfere with each other. Instead of fighting each other, we will all fight together and put our club on top where it belongs. *The kind of shoots that the N. R. A. gives both in and out of doors are the best kind of competition because strangers shoot against strangers.*

Clubs should make their dues as small as they can but big enough to cover the season's expenses. The shooting for members should be free with a charge for non-members. By doing this you will bring men into the club and at the same time keep your club members in. Gentlemen, it is a little tough on the member to pay dues and also pay the day's expenses when the non-member can get away from that, as he can in most clubs. Clubs should run in their programs a few running deer and rising bear shoots, as they have a tendency to take the hard strain off target shooting.

So, boys, get together, get behind the good old N. R. A. Get the clubs to scrapping each other and the members all scrapping together, and will put over what the *National Rifle Association* is striving so hard to accomplish—*"Our Country a nation of riflemen."*—B. Pope, *Sec'y*, Swissvale, (Pennsylvania) Rifle Club.

While there are many of us who will not agree with Mr. Pope that all club competition tends to dismember the organization, there is no question about the advisability of intercollegiate matches such as he suggests. It is candid expression of opinion such as that indicated here which develops ideas for the advancement of the sport Let us hear from other club secretaries on the subject.

CALIFORNIA STATE RIFLE ASSOCIATION MATCHES

An old friend pops up again in the announcement from the California State Rifle Association that the California Individual State Championship for 1924 has been won by E. N. Moore, Jr., of the Olympic Club with a score of 337 out of a possible 350 over a course of fire calling for ten shots slow fire at 200, 300, 500 and 600 yards, and ten shots rapid fire at 200, 300 and 500 yards. Moore turned in 45 at the 200 and 300-yard slow fire ranges, 49 at 500 and a possible 50 at 600 yards. He scored possibles at 200 and 300 rapid and a 48 at 400 rapid. Such a performance certainly indicates real state championship caliber. Moore's nearest rival was Sgt. F. H. Clark, of the 159th California Infantry, whose score was 326. There were 122 competitors in the match.

In the competition for the Southern Pacific Rifle Club Trophy, which was competed for by twenty teams, the Coast Artillery Corps team from Fort Winfield Scott was determined the winner with a team score of 1912 out of a possible 2100. The Olympic Club was runner-up with 1873, and the Southern Pacific Club, donors of the trophy, were third with 1823. This match called for teams of six, firing the same course as the California Individual Championship.

* * *

NOT SO BAD FOR IRON SIGHTS

In a recent match between the University of Chicago rifle team and Carnegie Tech the Chicagoans came out the long end of a 499 to 489 score. The team score of 499 x 500 speaks well for the ability of the college riflemen from the Windy City even though ten men did fire and only five scores were counted.

* * *

TURKEY SHOOT AT CAPITAL

The National Capital Rifle Club held a big turkey and chicken shoot in the National Guard armory range on Saturday evening, December 20.

The conditions of the match were so arranged that even the youngest novice had an equal chance with the seasoned shooters in order to encourage a large attendance and to present something out of the ordinary in this line. This was accomplished by the use of a transparent scoring chart which was placed over the completed target to determine the value of the shots on the target which bore no scoring rings.

Owing to the method of determining the scores, there was no restriction placed on the number of prizes any competitor might win. The matches were continuous and as soon as the entries for one match was filled, another was started so that there were no delays between matches.

The general conditions of the matches were as follows: Target, Special as prepared for these matches. Distance, 50 feet. Position, any. Number of shots, 3 for each competitor for each match fired in. Arm, any .22 caliber rifle or pistol. Entrance fees, 25c for chicken matches and 50c for turkey matches. Entries, 10 entries to each match —to be made at any time a match is open.

The high aggregate score in each match was declared the winner. In case of ties the competitors each fired one additional shot. Arms and ammunition were furnished to those competitors who appeared without guns.

WILL THIS SOLVE THE HANDICAP PROBLEM?

Having been playing around the small bore game for a good many years as a member of various clubs and secretary of two or three I have been trying to solve the rifle handicap problem, and after several months trial of a system I evolved believe that I have hit on something that may be of interest to other harassed secretaries.

I do not believe that any man or committee can arbitrarily handicap rifle shooters on what you think they can do or even past performances, at least it has never been done to my knowledge, the only man satisfied being the one who wins first place.

The plan follows:

Shots in the 7, 8, 9, and 10 rings count. No shot lower than a 7 is counted. All scores of 97, 98, 99 and 100 are scratch. For a score of 95 or 95 each 10 made gets ½ point. For a 94 or 93 each 9 and 10 gets ½ point. For a 92 or 91 each 10 gets 1 point. For scores of 90 and under each 10 gets 1 point and each 9 gets ½ point.

Chart is as follows:

Score	10s	9s	Score	10s	9s
100	0	0	94	½	½
99	0	0	93	½	½
98	0	0	92	1	0
97	0	0	91	1	0
96	½	0	91	1	0
95	½	0	90	1	½

How it works out: Score of 96 is made by a competitor. In order to get the biggest handicap he must shoot all the 10s possible. In making 96 he can only shoot 8 tens because if he shoots 9 tens then he must make a six to get a total of 96 and sixes do not count. Therefore he gets:

8	10s equals	80	
1	9 equals	9	
1	7 equals	7	
		96	
Plus 8	½s equals	4	for making 8 tens
Total		100	

or he can make 96 by getting:

8	10s equals	80	
2	8s equals	16	
		96	
Plus 8	½s equals	4	for making 8 tens
Total		100	

In this way it is impossible for a good shot to shoot 9 tens and then a low shot in order to get a big handicap. Likewise the man who gets fewer tens and more sevens, eights and nines is not as good a holder as the man who gets 8 tens. Nor is it so easy to get 8 tens and then hold a seven or an eight.

A man making a score of 95 can get his biggest handicap by only one combination of shots, that is making 8 tens as follows:

8	10s equals	80	
1	8 equals	8	
1	7 equals	7	
		95	
Plus 8	½s equals	4	for making 8 tens
Total		99	

For a score of 94 handicaps for both nines and tens are counted, and the same rule holds good, the more tens and nines the bigger the handicap. Eight tens and two sevens will give him 94 plus 4 or 98. Seven tens, a nine, an eight and a seven will give 94 and he gets 3½ for seven tens and ½ for one nine, making 4 handicap or a total of 98.

A 92 score gets its biggest handicap if shot with seven 10s, one 8 and two 7s. For the seven 10s he gets 7 points, making his total 99.

I cannot by any combination of figures make it possible for a handicap man to get better than a possible and that only to the man who shoots a 96 with eight 10s. Every other combination of scores and handicaps in this system will bring the handicap man up to around 97, 98 or 99, depending on the number of 10s he makes.

I have tried this sytem out in our club for several months and have yet to have a kick from any shooter and our twelve or fifteen run good, bad and indifferent shots.

Frankly it makes for more work for the scorer, but with a chart before him and counting as we do, the shots out of the ten ring, it becomes easy and simple after one gets used to it.

Elizabeth, N. J. George L. Schenck.

* * *

EVANSTON WELL FIXED

We have an idea that the concluding paragraph of Mr. Cocroft's letter contains the secret of the splendid range facilities which the Ridgeville club enjoys. There is an idea in that last paragraph for other clubs to bear in mind.

In reply to your request for information relative to the range facilities of the rifle clubs, I am pleased to be able to say that our club is very fortunately equipped with both outdoor and indoor ranges at no expense except for the original equipment of the indoor range and an annual rent of $36 fixed charge for lights.

For our practice with the .30 caliber and .45 caliber pistol at longer than 25 yard ranges we go to Fort Sheridan. And I wish to have you take notice that we have been firing either with pistol or rifle every Sunday, with only three exceptions since October, 1916. You will find members of the Chicago Rifle Club and some of our boys on the range no matter what the weather.

For small bore shooting we have the use of a vacant piece of property just outside the city limits where we have room for twenty to fire at one time at 50 and 100 yards, and can fall back to 200 yards, but cannot disk our shots as we have no protection for a marker.

The city of Evanston has allowed us to fit up a steel protected backstop and a partitioned-in clubroom 16 x 30 feet, in the building used by the Street Department, and we pay $36 as rent which does not pay for the light we use.

Our mayor is an honorary member of our club and the chief of police and some of the aldermen are regular members, so we expect to keep our indoor range for some time.

W. L. Cocroft, Sec'y.

* * *

A MARK TO SHOOT AT

The following communication from the secretary of a civilian club indicates what can be done with a rifle shooting organization under a well thought out and consistently adhered to program. You will notice that the club has been under the leadership of practically the same executive committee since its inception. It is admittedly wise to change pilots when the ship seems to be headed for a reef. By the same token, however, the experience of this club indicates it is a wise policy to keep the pilot who seems to be guiding things along a safe course. This letter should prove a healthy stimulant to every club secretary, particularly those who may have been inclined to feel that the rifle shooting game could never hope to operate on a successful financial basis:

To supplement the brief answers to your recent circular a short history of this club might be of interest.

The club was organized in 1920 with 25 charter members. Initiation fee was fixed at $5 based on an assumed initial investment of $200 in range equipment to supplement the equipment issued by your department. This proved adequate for the bare necessities, clearing, excavation for one target carrier and masonry butts.

Dues were fixed at $2 based on assumed annual expense. This proved inadequate and dues were raised to $4 which is ample if we do our own pit service. We have an average membership of from 50 to 65.

The proceeds from our turkey shoot held annually have been utilized to build the target house, and clubhouse and the remainder is in our general fund. We have also purchased and installed one Aiken carrier beside the one originally issued to us.

For two years we took care of our own pit service but for the past two we have been affluent enough to hire this done for us which adds materially to our pleasure. Our operating expense for 1921, our first year of shooting was $188.75, for 1924 it will approximate $500. Our income from all sources in 1921 was $692.74, that is fees, dues, and turkey shoot. Our income for 1924 will approximate $800. **Our book assets at this time will approximate $2,500.** This does not include material issued to us nor labor or material donated by members. It does include about $1,000 in the bank.

Our investments are approximately as follows

Range (including masonry butts at about $50 per target, 600 yards phone line, target house, clearing 50-ft. strip 600 yards and building firing points)	$550.00
Clubhouse	400.00
Reloading tools	50.00
Ammunition	250.00
Components of ammunition	50.00
Spare parts and extras, cleaning material	25.00

As you will note this has been the accumulation of four and one-half years of consecutive and consistent effort. The writer has been secretary since the organization. Two other members of the executive committee have also served for the same period and the new members have adopted the policies laid down at the club's organization.

We have solicited members solely because of their interest in shooting. We have solicited no charity. **We keep a clean range where our women folks enjoy watching us shoot and where they sometimes join in.** The membership are all respected citizens of this community.

As to marksmanship, the club started off with three expert riflemen, and was last among its competitors for its first year and a half. For the past two seasons, however, the club has put up a team which has taken first place in all the inter-county matches staged and its members have brought home the bulk of the prizes offered at these matches. Solely the result of careful coaching, study and team work. We now have nine members with expert ratings, and a goodly number coming along to crowd these nine next year.

This club has two standing committees, one on range one on eats. The range committee supervises all maintenance and improvement work on the range. The eats committee arrange the noon meal which we enjoy at our regular matches which are held regularly once a month with the exception of August and September at which time our range is uncomfortably hot. This committee also collects from the members the expense of the food provided. This is sometimes just prorated among all, sometimes the club chooses sides and the losers pay double.

I realize this is a rather rambling and disconnected letter but if it and the answers have helped to show how a successful club put it over it will have served its purpose. If on the other hand, it has no value no harm has been done.

* * *

BRIDGPORT OWNS ITS RANGE

The problem of financing the purchase of a range site is one that forestalls the successful organization of a great many clubs. The plan which is outlined in the following communication has been used successfully in a number of localities. It presupposes that the rifle range is organized by men of good standing in the community, and is conducted on a business basis. The Bridgeport Rifle Club is incorporated under the laws of the State of Connecticut.

We own outright our outdoor rifle range. Our indoor rifle range is located in the State Armory and we have no expense for rent, light or heat. All equipment, however, was purchased by the club.

On the outdoor range we fire almost due north. A hill acts as a natural backstop. The ground is exceedingly rocky and we have provided a boiler-plate baffle to stop ricochets. However, the land beyond this hill is nothing but swamp and timber and is not even fit for pasturing cattle. This tract of land extends for a considerable distance and the angle of departure of any ricochets that get over the hill is so high that they would have very little energy wherever they landed.

It was necessary to cut a few trees and do some grading, although we had to build no bridges. It was necessary, however, to do quite a good deal of dynamiting in order to construct the target pit. The ground is exceedingly rocky. A great deal of work

was done in taking out surface rocks to provide parking space for automobiles and also in removing rocks from the hillside in back of the targets. It was also necessary to slightly cut in the side of a hill in order to get a clear range at 500 yards. With the exception of the dynamiting, all of this work was done by members.

All the expenses of the club of any nature whatsoever have been met out of the income from dues. There have been no special assessments. The outdoor range property was purchased by issuing the club notes in denominations of $50 and $100, practically all of these being taken up by club members. A few, however, were taken by men outside of the club. Some of these have been retired. We have never had occasion to try any other plan for raising funds.

Our outdoor range has three target carriers. The same carriers serve for firing at 200 and 500 yards. No 300 yard firing point has been developed as yet. We built the target carriers ourselves. They are made of wood and are of the single sash type. They have proven entirely satisfactory.

We use a trolley system on our indoor range. The indoor range has eight targets, six of which can be used for prone shooting. Running from the firing point on a line between the fourth and fifth targets is a brick wall, which runs toward the targets about twenty feet. On the left of this wall there are four stalls for 20-yard pistol shooting. The partitions between the stalls are of double wood with boiler iron between, so that there is no possibility of a bullet on an accidental discharge going through the partition and injuring the man in the next stall. These stalls in no way interfere with firing 75 feet and the brick wall is provided so that pistol shooters may fire at the 20-yard line while the other half of the range may be used at the same time for rifle shooting at 75 feet.

At the present time we have no clubhouse at the outdoor range. We have had the building of one under consideration for some time, but have thought it best to wait until all of the notes covering the purchase price of the property are taken care of. We have two buildings on the range property, one at the butts and another at the 200-yard firing point for storing targets and target materials. We have no club rooms at our indoor gallery.

If there are any specific details you would like to know with the above information before you, we shall be very glad to supply same if we can.

Bridgeport Rifle Club, Inc.,
E. Naramore, Sec'y.

* * *

AN OFFICIAL PHOTOGRAPHER FOR THE CLUB

Mr. C. L. Jeppesen, secretary of the Black Hawk Rifle and Pistol Club, Waterloo, Ia., says:

We are going to take a photographer into the club and give him his dues for his services. It stands the club in hand to have an official photographer once in awhile for the sake of publicity.

Mr. Jeppesen's idea is a good one. A few good pictures in the newspaper or window of a local sporting goods dealer comes in handy as a publicity measure. In addition, there is a little item of profit for the club in the sale of club shoot pictures to the members.

* * *

IRVING PARK TAKES LEAD IN CHICAGO TRIBUNE MATCH

The seventh annual Chicago championship rifle tournament for the big bronze Tribune trophy got off to a flying start Friday night with thirteen of the city's crack teams putting up the best competition for an opening night yet seen in the association.

Last year's champions, the Irving Park Rifle Club team, piled up a total of 897 points for the lead, but only by a margin of five points over the deadly shooting Ridgeville team of Evanston, and only eight points better than the Centennial team of Chicago.

The Chicago Rifle Club team, shooting in the tournament for the first time in two years, accumulated 878 points for fourth, but is only eight points ahead of the Hamilton Club team. One of Hamilton's men hit a snag which cost the team a possible first or second place. Outguessing and out nerving the other teams is what makes the fun, and plenty of other surprises are in store for the coming five weeks of shooting.

Hamilton Club had the high individual for the week. J. D. Blackwell of that club hung up 190, three points ahead of the next nearest, C. E. Nordhus of Ridgeville. Huebner of Centennial and Partz of Irving are tied for third, one point lower. Another Hamilton Club man, E. M. Porter, turned in 185 for fifth.

Team standings follow:

Irving Park Club	897
Ridgeville Club	892
Centennial Club	889
Chicago Club, Team No. 1	878
Hamilton Club, Team No. 1	870
Hawthorne Club, Team No. 1	867
Commonwealth-Edison Club	840
Hawthorne Club, Team No. 2	838
Bell Telephone Club, Team No. 1	828
Chicago Club, Team No. 2	780
Bell Telephone, Team No. 2	779
Hamilton Club, Team No. 2	750
Bell Telephone, Team No. 3	747

* * *

REAL RIFLE PROMOTION

The following communication indicates rifle shooting promotion of the most unselfish nature. There are undoubtedly a great many future riflemen being developed in Milwaukee under this plan. There are thousands of Boy Scout Troops and similar organizations scattered throughout the country who are fertile fields for development under this plan:

We are organized in a somewhat unusual manner and have a somewhat unique purpose that may interest you. Our senior membership is largely honorary, there being not more than twelve shooters out of a senior membership varying between 24 and 30. The main use of the range is found in the privileges extended to three troops of Boy Scouts. There is but little expense connected with the range. There is no rental, no light bill, no heat bill, these being donated by the board of directors of one of our larger churches, which extends the privileges of the basement to the Boy Scouts.

The junior members, numbering in all about 85, are furnished guns, ammunition and targets, and supervision and instruction by the senior membership. Minor incidentals, such as breakages, express on ammunition, membership in N. R. A., etc., are absorbed by voluntary contributions on the part of the senior membership. Materials for the range were furnished by donations from local companies. Ammunition, two rifles and targets came from the government or the ammunition company (targets only). Additional rifles are loaned by the senior members.

By the above arrangement the active shooting members to the number of seventy or eighty enjoy range privileges and instruction without dues or fees of any kind. Interest is intense, the range being crowed whenever open, which is from one to three times a week, depending upon the presence of senior members for supervision or instruction. The work is very interesting and is certainly producing some shooters.

Milwaukee, Wis. F. Naglar.

* * *

IOWA BANKERS HOLD COUNTY SHOOT

The Monona County branch of the Iowa State Bankers Association staged a county shoot for the Vigilantes' Organization of the nine cities and towns within the county a few weeks ago. The match aroused a great deal of interest throughout the country, and local newspapers gave it a great deal of space. The match embraced several events, the winner being decided by the point system. The final standing of the towns is as follows:

Whiting	69	Blencoe	44
Onawa	55	Ute	37
Moorhead	48	Turin	35
Castana	45	Rodney	24
Soldier	45		

These county shoots in Iowa serve as elimination tests for the state Vigilantes' matches, and the entire system of local and state-wide competitions has developed an interested group of riflemen who are making the Iowa atmosphere increasingly unhealthy for enterprising bank hold-up men. As a matter of fact, the banks have had to resort to prize matches lately in order to keep the Vigilantes from losing interest, as bank robbers decided sometime ago that the tall corn state was an unhealthy place for them to operate and there seems to be little probability of an opportunity for the Vigilantes to try their marksmanship on the fast moving highwaymen.

* * *

PARADISE REGAINED!

We need no particular method of financing, we sit on top of the world. Range was built and presented to the club by the Hon. W. Cameron Forbes. Clubhouse was built in one day by members, and is situated on town land. Range is kept in repair by the town. Five .22 caliber Winchesters were presented to the club by the town. The Range is on nearly level open land. The town water pumping station is near the clubhouse. Club dues are $1 per year and pay all expenses. Why should we worry?

Norwood (Mass.) Rifle Club,
J. G. Hollingsworth.

* * *

GIRLS' MUNICIPAL RIFLE CLUB

Two postal matches were held recently between the Girls' Minneapolis Rifle Team and the Hamilton Girls' Team of Chicago, Illinois. The first match was a prone, telegraphic match with teams of five. All scores to count. The distance was 75 feet, official N. R. A. targets, .22 caliber rifles. The result of this prone match was: Girls' Municipal Rifle Team, 477, Hamilton Girls' Team, 468.

The second match between these teams was conducted in the sitting position with the same conditions as in the first match. The result of this match was: Girls Municipal, 461, Hamilton, Girls, 430.

The Minneapolis team was somewhat handicapped in both matches due to the fact that they did not have their own rifles and the Chicago girls had. The team has only three Savage N. R. A. rifles which belong to the club and the girls have to take turns using them. Only one member of the club owns a rifle of her own.

The club is ready to challenge any rifle team for prone or sitting matches.

Agnes De La Barre, Sec'y.

* * *

O'HARE HAS NEW ANGLE ON CAMP PERRY TRAINING

One, P. J. O'Hare, of Newark, New Jersey, better known to members of the clan as "Patty," has just returned from a trip to Ireland by way of Birmingham, England, which latter place will be remembered as being more or less intimately connected with firearms and cleaning accessories. Patty came back on the Leviathan and ran into the roughest voyage that the big ship has ever made.

We must quote one paragraph from Patty's letter. The last sentence outlines why in O'Hare's estimation the annual submersion at Camp Perry may be looked on as a godsend to all those who contemplate a trip abroad:

Just came back to the good old United States after a very pleasant trip. The Captain of the Leviathan, our great American ship that I came back on, claimed that only once did he remove his clothes during the trip, and was seldom off the bridge. I was more in luck—my clothes came off every night, and I slept fine. I was very fortunate not to get seasick. Living so close to Lake Erie a month or five weeks before I sailed, I believe, got me in good shape.

THE DOPE BAG

A FREE SERVICE TO TARGET, BIG GAME AND FIELD SHOTS ALL QUESTIONS BEING ANSWERED DIRECTLY BY MAIL

Rifles and Big Game Hunting: Major Townsend Whelen Pistols and Revolvers: Major J. S. Hatcher Shotgun and Field Shooting: Capt. Charles Askins

Every care is used in collecting data for questions submitted, but no responsibility is assumed for any accidents which may occur.

Is the .45 S. A. Obsolete?

I AM moved to rise and orate a little in regard to the article by L. J. H., Baltimore, in a recent AMERICAN RIFLEMAN, requesting to know if a Colt Frontier six gun were an antique. I sort of feel I am within my rights in writing, as I am a subscriber to THE AMERICAN RIFLEMAN, individual member of the N. R. A. and a member of a well known local club.

I will remark that your reply to L. J. H, was good, but you didn't quite cover the subject, due, I suppose to lack of space. I would like to state that I really believe there are more Colt s. a. Army pistols than any other make or model of handguns in existence in this country. This will probably sound unbelievable to one who has been in the East all his life where .25-caliber automatics seem to be the standard weapon, throwing in a percentage of .32s and (as the newspapers read) big .38s with a smattering of good, large caliber, d. a. revolvers and a goodly number of s. a. Army pistols even in the East. I know of over fifty s. a. Army pistols in Cleveland, and would know of many more, but I don't know many people here. Why then shouldn't every city have the same percentage of s. a. Army pistols, especially cities west of the "Big Muddy"?

Then, anybody that has been West, and when I say West I don't mean a five-day train trip to the Coast, but I mean "being out amongst 'em," a hundred miles from a railroad with a half broke bronc for locomotion—Anyone who has been there will agree that the old Colt Peacemaker is the standard handgun, and that there are plenty of them. I have been there more than once, and am going back again, and will say that I have been among many range riders in many Western States, Northwest and Southwest, and have seen them packing their hardware and nearly all had the Colonel, with a very few double actions, and on very rare occasions, an automatic, and these autos have a story, either their owner is an Eastern cowboy recently moved West and sticking to his favorite hardware till he learns better, or else the carrier is a tramp cowboy or such who is always about two dollars ahead of being "flat" and who just picked up the auto because he got it cheap, from somebody that just learned better.

I have "been there" and of all the guns I now own and have owned the only one I refuse to part with, loan out or allow to be handled is my .45 Colt Frontier with 7½-inch barrel, full blue, etc., —some gun. I have packed it from coast to coast, New York City to Los Angeles and Catalina, and have worn it on more than one saddle trip, suspended in a special cut and outline Hieser-made belt and holster costing $12.50, and worth twice the amount. I wish to state here that there still is such a thing as a fast draw, and that the art is well worth knowing, for quick action against sudden appearances of predatory animals as much or more than for a fellow mortal who has foolish notions.

Another and big factor for the single action which you did not cover is that they have just six parts constituting the action, counting the mainspring, and all these parts are big and simple, with no fine or intricate protrusions to wear, break or get gummed up. The gun is almost impossible to break, and always sure to function. Pack a double action, any kind, in an open Western holster across the sage and sands a couple of hours and you may well entertain a doubt in regard to whether that gun is going to work if you wanted it to. A double action is made like a clock, a peck of fine delicate parts, which must needs be oiled like a clock, and any Westerner can tell you what an emery paste the alkali and oil will make in the gun, and the dust sure will get inside the gun without much trouble, it even gets inside a watch face.

I am afraid I am going to disagree with you that a double action will reload faster on account of the swing out cylinder. It may unload faster but when loading, even with cylinder swung out you must fumble at your belt, get a shell and try to insert it pronto into a chamber, with cylinder swinging around and no guide to chamber, gun held awkwardly. I might even go so far as to state that a single action will reload faster, leastways, for anyone who has handled one even a little bit. There is a universal way to hold a single action when loading, in the left hand, hammer at half cock or loading notch, cylinder is turned by thumb of left hand holding gun while the right hand is in the act of plucking a cartridge from belt, and with the thick recoil cheek and loading gate open a waddie tosses the shell right into the chamber without the agony of finger insertion and pushing home. I have seen many do it and always do it myself. It is really easy, as all the weight of the cartridge is in the bullet or front end, and as the recoil cheek and loading gate extend back of chamber like a funnel the cartridge is merely tossed a matter of six inches or so right into the chamber and while the right hand is plucking next shell from belt left thumb is clicking cylinder over to next chamber.

The solidly set cylinder without the extra swing out parts extractor and other extra features of a double action is another reason why the gun will hold up better under actual use. The more parts and features to a gun the more delicate and unreliable same will be.

I will also state that Colt Peacemaker can be fired as fast as a double action by flip shooting (snap shots) or by fanning, both easily done (after a little practice). In fanning, the heel of the left hand wipes down back of frame and cocks the gun while the right hand is set to fire, finger on trigger. Gun is immediately fired and performance repeated. In snap shooting the cocking thumb is hooked onto hammer ear, gun elevated about two or three inches above mark and is jerked or flipped downward, thumb tensing and so cocking the gun by its own weight and no exertion on hammer. When gun is cocked it should be on a level or depending on how the gun shoots, where it ordinarily would be held when fired. Trigger finger is either squeezing trigger all through performance, making gun explode immediately, or it can be fired later. Even for slow firing the flip cock is much easier and more graceful than drawing the hammer back.

I am fairly proficient in all these little tricks, also in the art of fast drawing, rolling (either direction), surrendering gun, butt forward with the trigger finger nowhere near the trigger or guard, and suddenly righting and snap firing gun. All this can be done by anyone with a little practice.

As you state, the hammer throw is long and not the best for target work (if the user flinches) all the weight of fall being above hammer screw, so for anyone desiring a single action target gun I would suggest getting a Bisley Colt, which has nearly all the weight of hammer below the hammer screw and also a lower, wide cocking ear, making a much faster hammer fall.

I don't expect this letter to be printed but if you have L. J. H's address in Baltimore, you might forward this to him to help advise him as to the possibilities and desirable features of the Peacemaker. I surprised myself at this long-winded outburst and hope it may be of some help. A. J. S., Cleveland.

Answer (by Major Hatcher). I was very glad to get your letter, and found it extremely interesting. I like very much to have full views on any subject like this from people who have had experience. Of course I do not always agree with their views, as you would be surprised how many different opinions you will find on the same subject from people who are qualified by experience to speak with authority.

For example, in the same mail in which I received your letter praising the extreme simplicity and durability of the Single Action Army, I received another letter which contains the following:

I have shot various calibers of S. A. A. and some Bisleys for approximately twenty-five years, and like the hang, grip, and general function of the S. A. A best of any. Prefer .45, don't exactly know just why,—seems to deliver best accuracy all around, last gun had Sheared gold bead, 7½-inch barrel, sighted by Marble Arms Company, but had three mainsprings, three hammers, and three triggers inside of the first thousand shots in use.

Main spring breaks bad, the hammers breaking off the half-cock notch and end of triggers from letting up on trigger hammer as your answer says falls slow in arc it travels.

I have just quoted the above to show you how opinions will vary.

I have spent a great deal of time in some of the wildest parts of the Southwest, and also in countries where the dust was extremely bad. I was surprised to see a great many Colt Automatics used by people who had no time for theories and who only wanted practical results.

What you say about the single action being fast to reload when the user has had practice in handling it, is very true, and the same thing also applies to the double action, as a man who is used to handling it, can load it very much faster than you would think.

I was very much interested in your remarks about flip shooting and fanning. I will state, however, that the double action revolver can be fired even faster than this (although with very poor aim), if you know the trick of it.

In fanning the single action, both hands are used. Likewise in shooting the double action the way I referred to, both hands are used. The right hand holds the grip of the gun, and one of the fingers of the left hand is placed on the trigger. By pushing forward on the handle at the same time that you pull back with the left hand, the hammer is raised and the gun discharged. The spring of the gun returns the trigger instantly, and the operation is repeated. With a little knack, a sort of vibratory rhythm of this motion is acquired, and the whole six shots can be discharged so that they almost sound like one.

I have never been able to discharge an automatic as fast as this. By practising this trick a great deal of astonishment can sometimes be created in not letting anyone see just how it is done, as it is really so fast that it is very startling to one who does not know the trick.

Apropos of your remarks in regard to quick drawing, and also about the people who have been in the East all their lives, I would like to say that not all of the argument is one one side. An incident once came to my notice that illustrates what I mean.

A member of a very well know Eastern revolver club was out in the Southwest several years ago, and was carrying his favorite .38 Smith & Wesson Special. The frame of the gun was blued, but it happened that he did not like the long six-inch barrel for pocket use, and being something of a gunmaker, he had taken off the regular barrel and screwed on a four-inch nickel-plated barrel. This made a rather funny looking weapon, but to make matters even worse, he had fitted a crude looking sight of his own on the front of the barrel.

This man was well known in the United States Revolver Association, and was especially good in rapid fire. For amusement he would place the gun in the holster, and with his right hand pick up a small object, such as a stone or a small block of wood, and toss it into the air; then while the stone was still in the air, he would take the revolver out of the holster, cock it, and shoot at the moving object, rarely ever scoring a miss.

I have seen him throw a half brick in the air in this fashion and hit it twice before it reached the ground.

This man was present at a gathering in the outskirts of a small Southwestern town where some of the local talent were enjoying themselves in trying to hit some large whiskey bottles placed on top of some fence posts. The style of shooting they were using was to elevate the muzzle of the gun into a nearly vertical position, cocking the gun at the same time, and then swing downward onto the mark, discharging the weapon as the barrel pointed approximately in the direction of the target.

The most of their shots were wide misses, and our friend was standing there watching them and saying nothing, when one of them asked him what kind of gun he had. He took his .38 Special with the different colored parts on it, out of the holster, and it immediately caused a ripple of amusement to pass around the crowd. One of them asked him what he thought he could do with a short gun like that, and this rather raised his ire, so he replied, "Well, I'll shoot the necks off those bottles without hitting the rest of the bottle," and he proceeded to demonstrate quickly and neatly knocking the neck off of each of the several bottles that were sitting on the fence posts.

There were no more remarks of any kind. In fact the group melted away very promptly, and the target practice was over for the day.

I do not mean this incident to be construed as an insinuation that the marksmanship is any better in the East than in the West, as I believe that a good shot is a good shot no matter what section of the country he comes from, and as the total amount of shooting done in the West per man is greater than that in the East, it is probable that the average of Western marksmanship is higher, but merely because a man has lived in the East all his life, is no reason why he cannot be the best marksman in the country if he wants to.

What you say about dust getting into the gun with the oil, is very true, and for this reason most people who have had experience with guns in this kind of climate, do not oil them.

The .45 automatic is constructed with sufficient clearance between the parts so that if they are kept clean and wiped dry of oil, it will function perfectly even in a dusty climate.

In conclusion, I will state that I really appreciate your letter very greatly.

RELOADING FOR THE 25-36

I WISH to reload a 25-36 Marlin to obtain the best results with both full power loads and the most accurate of reduced loads. Will you kindly inform me in regard to the following?

Can the same loads be used in this rifle that are recommended for the 25-35? Are maximum loads for 25-35 safe to use in the 25-36 Marlin? I note that factory loads for the 25-36 do not have the velocity of the 25-35. Is this because the Marlin mechanism is not as strong as the locking bolts of other rifles?

What lead bullet would you recommend as being most accurate for mid-range loads? About what size groups could be expected? If results warrant, I expect to mount a Hensoldt 5X scope on this little rifle for use on crows and long shots at geese. What is your opinion of the Belding & Mull hunting mount for this scope?

I have a Swiss Martini target rifle of beautiful workmanship, a 35-inch barrel, chambered and bored for the .41 rim fire Swiss cartridge. About what can be expected in accuracy from this rifle? The breech block is fitted with a firing pin which can be removed, given half a turn and placed in position for central fire cartridges. Is it possible to obtain a central fire cartridge for this rifle? The 40-50 Sharps, bottle-neck case is almost a fit—a little small. The .405 Winchester bullet is a perfect fit in the bore. Could the rifle be chambered for this case (.405 Winchester) at a price that would warrant having it done? O. R., Seaside, Oregon.

Answer (by Major Whelen). The loads recommended for the .25-35 W. U. F. cartridge cannot, as a rule be used safely in the .25-36 Marlin cartridge. This is not because of any difference in the strength of the two rifles, if indeed there is such a difference, but is due to the fact that the Marlin cartridge has quite a little smaller powder space inside it, and loads safe in the Winchester cartridge would give dangerous pressures in the Marlin cartridge.

I should say that the maximum load in the .25-36 Marlin cartridge would be 24.5 grains of du Pont No. 16 powder, which will give m. v. 2,275 f. s., with safe pressure. This is for the 117-grain bullet. Probably two grains more powder could be used with an 86-grain jacketed bullet, but I don't think that the accuracy would be very good.

For a reduced load try the 86-grain bullet (jacketed), and 8 to 10 grains of du Pont No. 80 powder. Eight grains of this powder will give m. v. 1,360 f. s.

For a lead bullet load try the 87-grain B. & M. plain base bullet, cast 1 to 10 tin and lead, sized to about .258-inch, with 7 to 9 grains of du Pont No. 80 powder. You will have to experiment a little to find the exact powder charge that does the best. Much depends upon one's ability to mold, size, and lubricate the bullets, although you can buy the bullets from Belding & Mull already molded, lubricated and sized.

For a lead bullet with a little more velocity than the above try the B. & M. 87-grain gas check with about 13 grains of du Pont No. 80 powder (m. v. 1,650 f. s.) or with about 17.5 grains of du Pont No. 18 powder (m. v. 1,850 f. s.). This bullet should also be cast 1 to 10 and sized to about .258-inch.

To the best of my knowledge there is no Hensoldt 5-power telescope sight made. These sights are made in only 3 and 4 power, and the B. & M. mountings will not fit either of them. In my opinion by far the most satisfactory glass you can get for your Marlin rifle is a 3-power B. & M. hunting telescope with the B. & M. stationary hunting mountings. I have one of these glasses on a Savage, and it is the most satisfactory scope I have used. But much depends upon the rifle. There are no mountings that I know of, for example, with which the B. & M. telescope can be suitably mounted on a Springfield, and for the latter rifle a Hensoldt 3-power scope with Neske mount is by far the best, but such a combination would not be nearly as good on your Marlin as the B. & M. outfit.

I am afraid that I cannot give you much information on the 41 Swiss rifle and cartridge. I have never shot one, and it is a little to much out of date to be in my line. The bullet measures .425-inch, and hence I should think that both the .40-50 Sharps (bullet .403-inch) and the .405 Winchester (bullet .411-inch) would be too small.

AN OLD MAYNARD

I WOULD like a little advice regarding a rifle I purchased recently. The gun is a Maynard with the date 1873 on one side of the receiver and the inscription "made by the Mass. Arms Co., 1882" on the other side.

The arm has two barrels, interchangeable, one .22 caliber is 26 inches, the other .32-40 caliber is 30 inches; the rear sight is a peep with micrometer elevation and windage, the front sight is a globe with the removeable bead.

The trigger pull is just three pounds; the stock is a splendid piece of curly Walnut with a silver plated butt piece and checked pistol grip.

Question No. 1. What is this gun worth, the heavy barrel is perfect and the .22 is slightly pitted, balance of gun A No. 1? (I paid $15 for the outfit.)

Question No. 2. Will it be safe to use the standard smokeless powder or should I use black powder?

Question No. 3. Would it be practical to have the .22 barrel relined? J. E. W., Portland, Ore.

Answer (by Major Whelen). Your rifle is evidently a genuine Maynard of the better grade. It is worth anywhere from $15 to $30, depending on how much the purchaser wanted it. Of course the rifle was designed in black powder days, and the action is not a particularly strong one. I would not consider it safe except with black powder. However, these rifles were excellently made, and were very accurate, and much liked in their day.

I should certainly keep the rifle for black powder. I think you will find it very satisfactory. The .22 caliber barrel can easily be relined, and if I were you I would have it done. Send the rifle to C. A. Diller, Dayton, Ohio, who does this work very satisfactorily, and cheaply.

THE WESTERN .303

WHAT are the ballistics for the Western .303 British 174-grain open point Lubaloy? I believe the powder charge is 39½ grains Hi Vel. I use this load in a Ross with 28-inch barrel and get remarkable accuracy.

Have you tried out the Dominion .303 British high speed with 150-grain copper point bullet at m. v. 2,800 f. s.? How do you find it? In my rifle I have been unable to get even fair accuracy with this load. It seems to me that the point tapers from too far back thus leaving insufficient bearing to ride the lands of the rifle. J. G. F., Aurora, Minn.

Answer (by Major Whelen). The muzzle velocity of the .303 British Mark VII cartridge of Western make is 2,460 f.s. The height of trajectory at 100 yards when sighted for 200 yards is approximately 3.5 inches. This cartridge with open point bullet, 174 grains weight, should be a very satisfactory hunting load.

I have never shot any Dominion .303 ammunition. It is seldom that I see any Dominion ammunition.

THE .33 WINCHESTER

WILL you be kind enough to give me a little information on the .33 Winchester cartridge. The Model 86 Winchester action that handles this cartridge is, to my mind the best, strongest and fastest lever action ever put out and it has never failed me or any others that I know of, in time of need. In order to get this particular action, it becomes necessary to take the .33 cartridge or go without.

The loading companies in general seem to be improving about all other types of cartridges except the .33 and this one seems to stand still. Why is it? In your book on cartridges and loads for American rifles (N.R.A.) it sets forth the .33 can be loaded with 44.3 grains of Her. No. 300 with a muzzle velocity of 2,253 f. s., which would develop about 2,254 f. p. energy and well within the safety limit of breech pressure. Why is it the loading companies do not put out a load similar to this, especially the Remington with their new express mushroom bullet, which, by the way, happens to be a corker in the .30-06? With the above load in the .33, it puts it way ahead of the .30-30, 35 Remington and about near a par with the .30 Army. Does not the shape of the .33 bullet meet the requirements of a rather long bullet of small diameter and well fitted for speeding up? Then again the case has good powder capacity, compared with some others. Is it not possible to speed this bullet up to about 2,400 f. s., and still keep within the safety margin as far as breech pressures are concerned? I will appreciate any other information you may be able to give me on this cartridge, for or against.

Taking the Model 86 Winchester action, is there any other modern cartridge with higher velocity that could be used in this action by having the same changed and a special barrel made by Griffin & Howe or Hoffman? L. R. W., Manasquan, N. J.

Answer (by Major Whelen). I did considerable experimenting some time ago with a .33 Winchester rifle, particularly with all the loads of du Pont No. 16 powder which is practically the same as Hercules No. 300. I tried 41.5 grains, 40 grains, and lastly 38 grains. With the first two mentioned charges the recoil was rather severe, and the jump very excessive. It was hard to get the rear sight low enough. I came to the conclusion that the charge of 38 grains which gives the normal M. V. of 2060 f. s., was by far the most satisfactory load. Also the other two loads expanded and lengthened the cartridge cases so much that they cannot be reloaded unless resized in a full length resizing die, which I did not have. With these pressures the cartridge has quite a comeback in the chamber on account of its taper, gives increased back thrust on the bolt head, and the bolt gives a whole lot on account of being locked at the rear, and being made of rather soft, non-heat treated steel.

I share your good opinion of the Model 1886 action. It is a splendid action in the way it handles and adapts itself to the hands and the operations of firing. But it is a black powder action, and it would need a whole lot of changes in the specifications of the steel and in its heat treatment to really fit it for heavy pressures, and even then it would not be nearly as good as an action the bolt of which was locked at its head.

The .33 W. C. F. cartridge was a makeshift to utilize the 86 action, and the .45-70 case necked down, and thus sort of modernize the rifle. But the case has too much taper, giving little side wall friction in the chamber, and putting too much back thrust on the bolt. The short, flat nose bullet does not overcome the resistance of the air well, and it expands entirely too much, and does not give good enough penetration on really large game. A very experienced guide and camp owner from near Yellowstone Park told me that lots of men out there get .33 Winchesters on account of their liking for the old 86 action which they had used with the .45-70 cartridges, but they soon found that it did not kill well on elk, so they changed and used the full jacketed bullet, giving better penetration, and this did the business.

I am told that there is not much interest in the .33 Winchester. The sales are really not enough to warrant keeping this rifle on the market after the present supply of breech actions is exhausted. Undoubtedly the cartridge manufacturers know this, which explains why the cartridge has not been modernized more.

It is too bad that the 86 type of action was not used for the .30-30 line of cartridges instead of adapting an entirely new action, the 94 model.

PEST HUNTING

I HAVE just received latest copy AMERICAN RIFLEMAN and studied carefully the article by Mr. L. P. Holmes on the .250 Savage with your comment. I do much hunting of pests such as ground squirrels, rabbits, magpies, coyotes, etc.

Here one may hunt over the same ground year in and year out without noticing much signs of thinning out such stuff except coyotes. In game killing many things must be considered and one of the most important and one often overlooked is distance of game from shooter.

For instance it has been my experience that pocket pistols up to and including the .41 long Colts is a miserable failure at stopping jack rabbits at 30 to 40 yards. While I have not used the .22 N. R. A. hollow points on game from pistols, yet I side with Ness and Kephart in the belief that they would make a worse wound from a pistol than the common pocket .32's and .38's.

The N. R. A. hollow point's killing power and accuracy in my Savage Model 1919 is simply wonderful up to 75 yards any way.

A good number of crows, hawks and pheasants have fallen in a way to cause the shooter to smile while using the latter combination at distances well over 100 yards. However, with the crows and hawks watching shooter they often fly before bullet arrives at such distances.

When I read your *American Rifle* about six years ago I considered the worst error in the book as your recommendation of the 150 f. s. velocity for coyotes.

Coyotes require much killing. To date I have shot seven of these gents with .22 rifles at from thirty to 100 yards holding carefully each time; six times for heart and lungs and once for neck low.

Out of the seven I killed just one coyote with the aid of a good hunting dog to harass him.

Often one may hunt the entire season with a new weapon having the gods of luck smiling upon you broadly—nothing but success.

Good weather, good food, everybody in a good humor, running onto game continually, later dropping dead at first shot just as you expect.

Ye gods what a good gun be it anything from a .22 h. p. on up. Certainly, positively the most wonderful gun ever.

Probably next season the gods of luck frown upon you and your favorite rifle.

You tried to shoot game through brush that turned the bullet. You tried to shoot game coming into camp when darkness was setting fast and you couldn't see the sights clearly resulting in crippling the game only and you failing to get it.

You tried a shot at an unusually long distance and seemed to hit it just about right but some way the bullet didn't knock hell out of it as usual. Oh well, lay it on to the darned old gun.

Should I hunt jackrabbits with a .405 Winchester or a .400 Whelen? I would expect a few cripples to escape.

I believe that in a heavily timbered country a Charley Barker will secure more deer with a four-pound single shot .22 rim fire than the average city sportsman can with a fancy sporting Springfield.

In using a .22 Savage H. P. and a .25 Niedner barrel on Springfield action to give the 87-grain Savage bullet the usual 3,000 f. s velocity I usually have mighty good luck stopping coyotes up to about 200 yards. Beyond that distance many escape crippled.

A goodly number of .22 H. P. bullets stop in a coyotes shoulder even though the distance is only 30 yards. However Mr. Coyote is dead now.

I believe the 100-grain Western bullet in the .250 Savage to be a much better killer than the 87-grain; however, I have not had as much experience with the 100-grain as I have had with the 87-grain and I am not positive.

It requires much time and experience to prove such things. I too am convinced that one should not use the .250 for regular hunting on larger game than deer and black bear. Moreover I am confident that should Mr. Holmes shoot many deer and bear over 200 yards away a big percentage of cripples will escape for ravens and coyotes to feast upon.

The terrible little bullet that started out at 3,000 f. s. velocity looks awfully pale at 250 yards, an dit makes a very small hole in the game.

Luckily we shoot most game at less than 200 yards. My next rifle will be a .250 Savage bolt action, 26-inch barrel, weight slightly over seven pounds. The .250 is an awfully sweet little rascal.

Really I can't see where it makes much difference whether a bullet passes entirely through an animal. To kill they must penetrate and smash that done I don't care where the bullet quits at.

The .41 long Colts at 30 yards will pass through a rabbit but they don't smash through as they should. They are too slow. The little Savage bullet usually passes through a coyote at 250 yards, but it doesn't open up right.

In Kephart's Smoky Mountain country many whites and blacks get shot with pocket pistols. Nearly always the bullets stop in the man, but often the victim recovers after several bullets have been shot into him. Small bullets must penetrate and have speed enough to smash as they go. W. B. C., Oreana, Idaho.

Answer (by Major Whelen). There is a lot of good common sense in your letter. I have sent it back to the Editor of THE AMERICAN RIFLEMAN with the suggestion that he print it if he can find space for it.

It seems to me that there are two angles of view from which one must look at the shooting of small game from coyotes down. One is where the small game is a pest, and it is wise to destroy it in the interest of game conservation. Then one naturally wants to use the most killing cartridge, that is the one he can both hit oftenest with, and which stops the quickest. Then there is the standpoint of the man who shoots for trophies, and who would rather not kill a coyote than tear its hide all up. That's me. I have never been in a country where coyotes were really pests. I have shot a few of them, and lost a whole lot more. I once knocked one down, seemed to kill it deader than a door-nail, in the sage brush at about 15 yards with my old .40-72, saw it fall and kick around between two bushes, and yet when I went to pick it up it was not there. Beats the band how they can run off with lead. I have killed two with the Springfield reduced load, 18 grains No. 80 and 150-grain bullet, and lost one. This load leaves all hides from mink and otter up in fine condition.

Mr. Riggall, a very experienced guide of Alberta has used the .250-3000 Savage a lot on goats, killing a lot of them at quite long ranges. He wrote me of killing one at about 400 yards, and the bullet (100 grains Western) did excellent work. My experience has been that the goat is the hardest of all our animals to kill, dead, although it is easy to get because one can almost always get in a lot of shots before it gets away. It is easy to anchor. The little .250-3000 is a very wonderful cartridge, but I don't want it for anything larger than deer. Thanks again for your good letter.

WAPITI IN NEW ZEALAND

MY excuse for writing to such a busy gentleman as yourself is to give a few facts on wapiti in New Zealand. As far as I know the Government only issue a very limited number of permits, perhaps six, to shoot wapiti. They are *balloted for*. The country where the deer and moose are is very rough—not roaded or occupied and transportation is very difficult. Still in time things may be improved.

The red deer in some parts have become a nuisance and are being killed by the hundreds. But heads have become poor — fancy letting a contract to kill 1,000 head on one station of 73,000 acres. The rifle used is usually .303 soft nose.

I have no personal knowledge of deer in New Zealand. They are in high, broken country and at seventy I am too old to bother, especially as I have plenty of rabbits here to amuse myself on.

I have these rifles:

1897 Marlin, .22, new barrel, Lyman sights.

39 Marlin .22, new barrel, Lyman sights and scope bases.

Winchester musket, '87, 26-in. barrel, A-5 scope. I made a pistol grip and cheek piece stock for it and omitted the heel plate. Weighs complete 8½ pounds.

Winchester 52, 24-inch barrel, A-5 scope. I built up the comb and pistol grip on this one. I cut of four inches of barrel to balance the rifle and reduce weight. I made a blank for rear sight slot and fixed scope base on it. Then I put front base some nine inches away, making a good long base.

Maynard 25-21 and sidle scope.

044½ Stevens 25-21, worn-out barrel.

Savage Sporter 25-20 with Fecker No. 45 scope. I checked stock, etc., thanks to your book.

B. S. A. 177 air gun.

Greener hammer gun, 14-gauge Perfect shells, really a 12-gauge with 14-gauge chambers. It is a splendid shooter. I have had it over thirty years.

B. S. A. 12-gauge, a useful gun.

I often go out, but in practice it is either the 52 or 87 musket that I take. The Marlins shoot very true, but somehow don't come up to the Winchesters, unless used over a rest; because they are too light to hold steady.

I now take THE AMERICAN RIFLEMAN; also others, but I like the former best—I read your notes with greatest interest. I sent a query for the Dope Bag which perhaps you will answer relative to the .25-20 Savage sporter, which I lately acquired. I got two pounds of No. 80 powder. It wasn't clear if the barrel would stand up to smokeless loads and smokeless primers, No. 80, and lead alloy bullets, so in due course I will likely see your reply.

Really the .22 l. r. Lesmok, hollow point, .35 made by Remington are very deadly on rabbits. I am not sure that they will not flatten out a rabbit, hit in the stomach better than a flat point 25-20 bullet, but I wanted the .25 for a bit longer range rifle. So far bullets 1-16 with 7 grains No. 80 will make close groups at 25 yards, bullets cutting into one hole, but with factory black lead loads I couldn't do better than four inches at 50 yards, which was no use to me. I believe the .22 long rifle will *shoot closer* than 25-20. C. F. E., Rewa, New Zealand.

Answer (by Major Whelen). I was very interesting to know of the success of the wapiti in New Zealand. They are certainly a noble beast, and their heads make a grand trophy. I do not know of any game except mountain sheep that I would rather hunt than wapiti. With us it is not only the trophy itself, but the magnificent country that they inhabit. Also I think that you have all this in New Zealand for I know that your country is noted for its scenery.

I note that as formerly you are continuing your experiments with the little .25 caliber rifles. They are fascinating little weapons, and so useful when one is in a small game country. They have not stood the adaption of smokeless powder and jacketed bullets very well. Part of this is due to the almost universal use of Sharpshooter powder, and part to the fact that the rifles still continue to be made with the ordinary steel barrel as in black powder days. I feel quite sure that corrosion cannot be prevented with such a combination. But lately two other powders have appeared which seem to be more suitable. Du Pont No. 80 a low pressure bulk powder suitable for black powder velocities, and du Pont No. 50 powder, suitable for a little higher velocity. I have not tried the latter powder except in factory loaded cartridges made by Winchester for the .25-20 W. C. F., and .32-20 W. C. F., but in these calibers I have had no trouble in preventing corrosion by proper and modern methods of cleaning. So I cannot tell you the charge to use of this powder. I have gotten fine results from the .25-20 single shot cartridges and du Pont No. 80 powder, using the Western Cartridge Company 87-grain pointed bullet with Lubaloy jacketed designed for the .250-3000 Savage cartridge in a barrel made of nickel steel. But I imagine that such equipment is almost impossible in your case as you are so far from the markets.

I am inclined to think that in your case about the best you can do is to use black powder and lead bullets. With these one should get fine results just as we used to get in the old days when we had nothing else. With such loads much depends upon the perfection of the bullet, and upon the temper of lead and tin of which it is cast. It is best to load all bullets, even the metal cased ones, as far out of the case as ease of seating the cartridge in the chamber will permit.

I do not know any way of cleaning .25 caliber rifles of the .25-20 class which will prevent corrosion when Sharpshooter powder is used. But I am sending you under separate cover a little pamphlet entitled "Cleaning and Care of Modern Firearms," and I think that by adapting the method of water cleaning together with a use of a brass brush while the bore is still wet with water, you will have no trouble in keeping your bore clean with other powders. That is, wash with water, use brass brush while bore is still wet, use more water to wash out what the brush has loosened, and finely dry and oil or grease.

In the majority of cases I think that you will continue to get best results on your small game with your .22 caliber rifles because they are always good and reliable if one can get fairly fresh ammunition which can be secured almost anywhere. The .22 caliber long rifle cartridge with hollow point mushroom bullet will give very greatly increased killing power on game like rabbits. But of course the .25 calibers are most interesting weapons to work with, and offer so many possibilities that one hates to give them up.

I assure you that I have been very glad to have heard from you again.

SHOCKING BULLETS

CAN the protuberance on the left side of the left side of the receiver of the Springfield be safely removed, that is, without rendering the action any weaker, so that it will withstand the maximum pressures? Am familiar with the Springfield and have already a plan for a new bolt stop. My way of thinking a magazine cut off has no place on a sporting arm, and also don't like its looks, and it is much in the way in restocking. I do my own wood work since your description of same.

Now, again, from my knowledge of physics, I feel that shocking of a bullet going at the rate of about 3,000 f. s., would be of great addition to the stopping of game, if we could be sure that the bullet would keep going in the direction that it entered—not be deflected—and if the bullet did not fly to pieces. How about a game bullet for the Springfield of 150 or 160 grains with the blunt nose of the 220 grain bullet with a very thick jacket and small bit of lead uncovered at the point, and loaded to give a velocity of about 3,000 f. s.? We could here have a bullet that would continue in its original direction, would hold together, and have the added shocking effect of the very high velocity. W. E. B., Topsfield, Mass.

Answer (by Major Whelen). There is no objection to grinding off the protuberance on the left rear of the Springfield receiver which serves to secure the magazine cut-off, provided that some suitable bolt stop be devised and substituted. It will not seriously weaken the receiver in a vital part to do so. The protuberance should be ground off, no heat being applied to the receiver in order that it might be filed off. That is the heat treatment of the remainder of the receiver should not be disturbed.

With regard to the 150-grain, thick jacketed, round nose bullet of .30 caliber to be driven at 3,000 f. s., which will penetrate straight without serious danger of deflection in an animal, and which will not go to pieces before it has penetrated sufficiently deep. First, I do not like the powder charge necessary to give a 150 grain bullet 3,000 f. s., in the Springfield. It will take about 52 grains weight of du Pont No. 16 powder, and the breech pressure will be about 54,000 pounds, with coppers uncompressed as the du Pont Company takes pressures, which corresponds to a pressure of about 57,000 pounds as the Government takes pressures, or with precompressed coppers. I think that this pressure is too high. It will be all right while things are all right, but let a single thing go wrong and you are liable to a serious accident. Even should you be certain that every single cartridge case you use is exactly right as to the structure and hardness of its brass, and that none of them have any chance hung up in the annealing furnace and gotten slightly softer than they should, I still think that in practice you will find that the use of such ammunition is attended with many swelled head cases, and with punctured primers and primers blown out. Personally I would not countenance any such ammunition in a hunting rifle as I wish to be absolutely sure of the operation of the rifle every time, with no sticking fired cases, and no primers dropping into the breech mechanism and causing jams. I should therefore strongly counsel that the weight of the bullet be decreased to about 130 grains if possible.

I would advise that you write the Western Tool and Copper Works, Station G, Box 57, Oakland, Calif., relative to bullets. They make a line of bullets with extremely heavy jackets, and it is possible that they may have exactly what you want in the shape of a light bullet for the .30-30 cartridge.

SPEEDING UP THE KRAG

ADVISE me as to whether or not there is any safe load for the .30-40 Krag which will give it a 2,500 or 2,700 f. s. velocity. R. S. H., Wilmette, Illinois.

Answer (by Major Whelen). The highest permissible pressure in the Krag rifle is 43,000 pounds per square inch. In my opinion loads should be kept below 42,000 pounds.

Forty-four grains weight of du Pont No. 16 powder, with the 150-grain pointed .30-06 bullet will give a muzzle velocity of 2,700 f. s., with a pressure of about 41,000 pounds.

Forty-three grains of du Pont No. 16 powder, with any proper 170-grain jacketed bullet will give a muzzle velocity of about 2,600 f.s., with a pressure of about 41,500 pounds.

Forty-six grains weight of Hercules No. 300 powder with the 150-grain bullet will give a muzzle velocity of about 2,700 f. s., with a pressure of about 40,000 pounds.

Forty-two grains weight of Hercules No. 300 powder and any proper 180-grain bullet will give a muzzle velocity of about 2,495 f. s., with a pressure of about 41,000 pounds.

These loads should not be exceeded.

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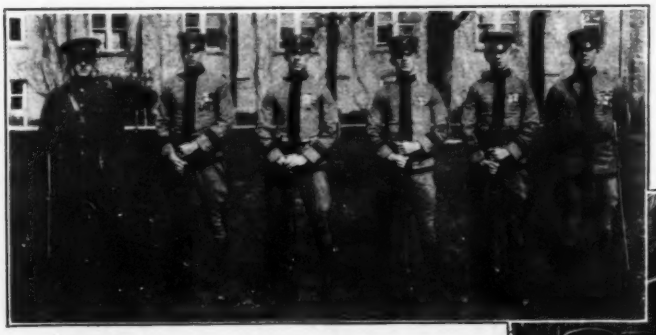
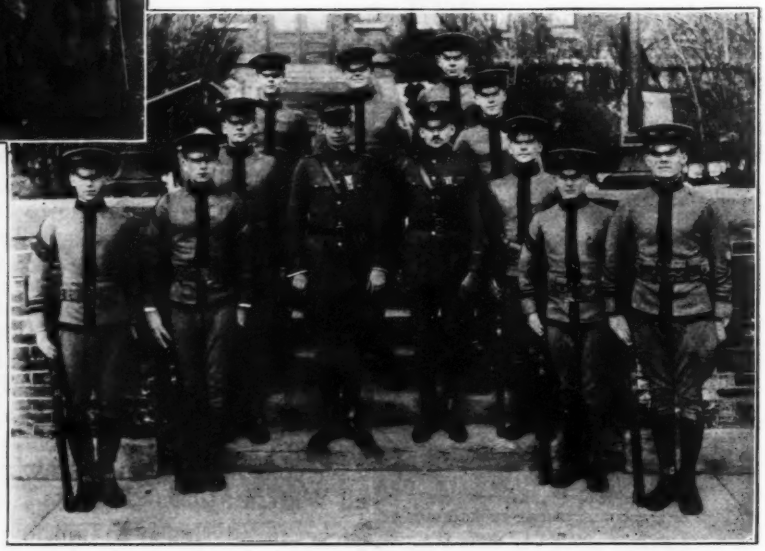


LEFT — St. John's Military Academy, Delafield, Wisc., winners of the N. R. A. Military Schools Championship.

LOWER — Culver Military Academy, Culver, Ind., second place winners in the same competition.



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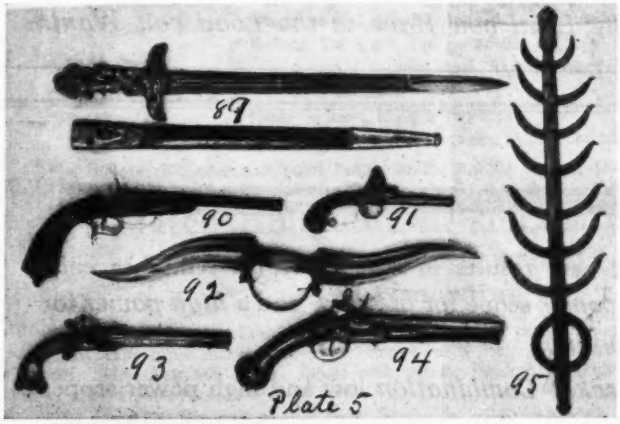

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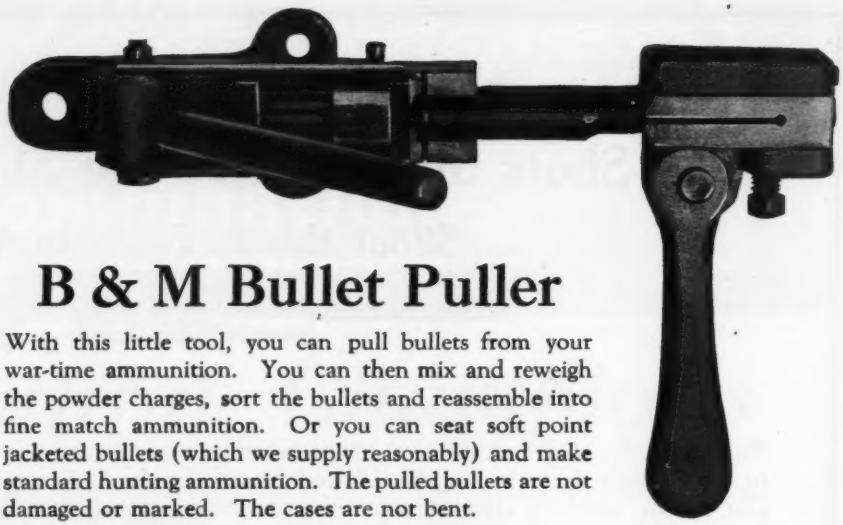

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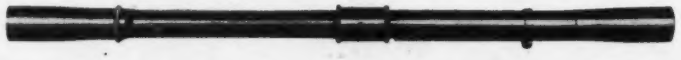

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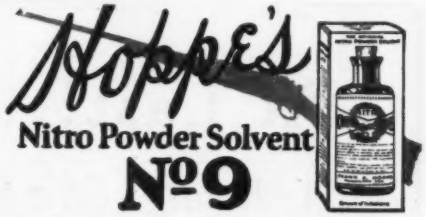

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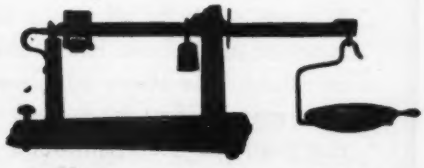

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FOR SALE—Guns and pistols from matchlock to cartridge. List free. WANTED—Kentucky flintlock rifles, Pettingill 44, Darling brass barrel pepperboxes, Walsh 12-inch, Lindsey two hammer, Noel ten-shot, Elgin percussion cutlass pistol, Alsop large pistols and revolvers, with ivory or pearl stocks. All fine. The Spencers, Lebanon, Ohio. M

SPORTSMEN EXCHANGE—We buy, sell and exchange guns, rifles, revolvers, high-grade rods and reels, field glasses, cameras, watches. Highest prices paid for old gold, silver, platinum and diamonds. Expert watch repairing. Send the article with a letter, and we will make you our best offer by return mail. E. Wanger, 515-R Ludlow St., Philadelphia, Pa. L

SHIFT WITH THE HOUSE OF SHIFF THE GUNMAN, N. Woodstock, N. H. This is our 54th year, and best. I have never shipped a gun I did not personally back EXCEPT NEW DIRECT to your order. I never carry because they are cheap but only because they are RIGHT. One charge. One price to ALL. If you have not shipped your stamp, if you are not fighting fanatics, if we have to smuggle our guns as you do a drink THEN SHIFF'S NEW YEAR'S MESSAGE to YOU is that it serves YOU WELL AND RIGHT. H

FOR SALE OR TRADE—.25-35 Winchester carbine, new, with case. Empties and bullets. Springfield as issued, perfect condition. 7.62 Russian Sporter, new, 100 handloaded cartridges. .45 Colt Automatic, commercial grade, two barrels, three magazines, practically new, perfect with belt and holster 1,500 rounds ammunition. Winchester 5-A scope No. 2 mounts, new. 6-power B. & L. Binoculars with case. WANTED—.250-3000 Savage, bolt action preferred. .25-35 Model 1899 Savage. .38 Colt Army Special, 6-inch. 52 Winchester. E. B. Huffman, P. O. Box No. 152, Columbus, Ga. 480

"FIREARMS OF YESTERDAY" are a specialty with "THE OLD GEORGETOWN GUILD." At all times there are on hand a large number of specimens from which to select examples of early American, Confederate States' and European firearms. Tell us what your collection needs. We will probably be able to help you. The Old Georgetown Guild, 2722 M. St., N. W., Washington, D. C. F

FOR SALE OR TRADE—DHE Parker 16-ga. ejector in factory condition, purchased this season, stock 1⅝ x 2⅝ x 14, 26-inch bbls., bored, 150 pellets right 200 left, with extra set of 30-inch barrels, bored, 180 right, 220 left, cost with fine case $275, will take $225 cash or trade for light 12-gauge field gun and difference. Neidner Springfield .30-06 chambered .0001-inch clearance at neck, 12-inch twist heavy Neidner 25-inch No. 3 bbl. checked 1922 pistol grip stock with 5A Winchester scope, Lyman No. 48 rear and gold bead front. Fired about 100 times with hand loaded ammunition (gilding metal bullets). Perfect in every respect. Price $115, or rifle without scope and mounts, $75. Ideal loading press complete for .30-40 but without parts for loading cast bullets, with about ten dollers' worth of extra parts. Make offer. Dunlap Roddey, Rock Hill, South Carolina. 489

WANTED—Old gun catalogues, gun books. Remington 44-40 revolver. FOR SALE—Bullet molds, 45-70-405, 45-70 round ball. 44-40 Winchester, like new, $1.60 each. 30 cal. mold, 5-pound balls, like new, $2.50. 50 cartridges 40-70 B. N. Solid head shells, $4. Cartridges 44 long Ballard, 45 Peabody Sporting rifle. Remington 38 cal. 1¾-inch shell. Gordon Cumming the "African Hunter," 1856, 620 pages, $2.50. "The Shooter's Companion," London, 1830, a rare book, $3. Fred Wainwright, Grayling, Mich. 486

FOR SALE OR TRRADE—9 mm. Luger 5-inch barrel year 1916, and Krag Carbine with about 400 cartridges: both in first-class condition in and out. WANT .44 S. & W. Special 4-inch barrel encased ejector rod, must be first-class in and out. John E. Osborn, 1806 Yecker Ave., Kansas City, Kansas. 482

FOR SALE—Remington autoloading rifle, cost $62, sell for $50. Remington autolading shotgun cost $62, sell for $50. Remington slide action rifle model 14A cost $49.50, sell for $40. All new, never fired. P. O. Box 630, Schenectady, N. Y. 485

WANTED—A heavy model .22 cal. S. & W. revolver with rusted or shot out barrel. Give price and full particulars in first letter. Geo. Titherington, 1321 S. American St., Stockton, Calif. 483

FOR SALE—New 52 Winchester with No. 5 scope mounted, has never been fired, first check for $50 buys it complete, bargain. Sam McKinley, 911 W. Ottawa St., Lansing, Mich. 491

WANTED—Colt .45 Automatic. Ammunition for Russian rifle. Two bayonets for Ross. Cash. W. E. Woestman, P. O. Box 2151, Sta. A., Pasadena, Calif. 484

FOR SALE—240 rounds cal. .30 model 1923, 170-gr. boat-tail ammunition, $8.50. Laurence Nuessiein, 1119 14th St., N. W., Washington, D. C. 490

FOR SALE—2,000 antique firearms at reasonable prices. Send six cents in stamps for 24-page price list. Let me know your special wants along any line of antique firearms. I am always anxious to buy single specimens or entire collections. Joe Kindig, Jr., 336 West Philadelphia Street York, Pennsylvania. G

MAKE YOUR old guns like new with new method gun bluer, large size can, enough for five guns postpaid for $1. New Method Gun Company, Dept. Z 1, Bradford, Pa. 494

FOR SALE OR TRADE—S. & W. .32-20 revolver, very good condition, $22.50, or trade on good double gun. W. A. Hardenbergh, Box 1728, Birmingham, Alabama. 495

FOR SALE—B. S. A. .22 cal. rifle, accurate, with 5A Winchester scope, $45, without scope, $25. Both in new condition, have no use for it. Casper Motzko, Concord Blk., Butte, Mont. 487

TRADE—L. C. hammer, double 16 full choke 30-inch barrels, like new and perfect, for Auto-Remington 12-gauge in new condition and boot where boot belongs. I want to buy a scope ⅞-inch straight tube or less without mounts, also good field glass and latest model silencer. E. A. Hilkert, Knightstown, Ind. 488

FOR SALE—Each article listed below was bought new by me at retail prices at the time of purchase. Each is priced, whether new or old, at a proportionately marked reduction from its original cost. Each is an honest bargain. For fuller particulars address letter. No trades. Postal money order only. These articles will not be listed again: One super-accurate made-to-order Griffin & Howe .30-06 sporting Springfield, matted rib Poldi steel barrel, handsome stock engraving. A really new and superb hunting weapon, $140. One hand finished especially assembled .45 Colt's New Service revolver, 5½-inch barrel, trigger and both straps checked, pearl grips, Heiser carved Mexican holster, twice-around cartridge belt, 300 cartridges, $40. One National Match Springfield barrel and fully assembled action, No. 48 sight, military rear sight base removed. Not new, but in really splendid condition and will group its shots as close as ever, $15. One particularly fine 30-power one draw general observation and spotting scope, leather covered and end caps and sling. Adaptable mount for same to use on any standard American camera tripod. Finest optical specifications and in perfect condition throuout, $25. One genuine Carl Zeiss 8 x 30 binocular with case. Shows some handling but is in perfect mechanical and optical condition. A fine glass not to be confused with the flood of cheap binoculars now on the market, $20. One genuine Carl Zeiss 7 x 50 binocular with case ("Binoctar" model). Absolutely brand new and perfect in every detail, the most remarkable of all free-hand glasses, $60. One Henry Troemner fine balance (scales), with set of weights, weighs 1/10-grain to 300 grains. An expensive outfit and absolutely brand new, $15. One Bond .30-06 tool, new, $5. One Huerter Brothers straight line .30-06 tool, new, $5. A small quantity of Frankford Arsenal primed and unprimed new .30-06 cases, one cent each, the lot only. One fine leather case for Service Springfield, $5. One canvas leather bound case, new, for Springfield, $5. All shipments by Express Collect. R. D. Talmage, East Hampton, N. Y.

WANTED—New barrel for Krag carbine. Would consider Krag rifle barrel if good. S. H. Lapsley, Box 51 K. S. A. C., Manhattan, Kan. 493

FOR SALE—Polyphase Slide Rule No. 4053-3F. like new, with magnifier, all in leather case, $10. Omer E. Huff, Fulton Fdry. & Mach., Co., Cleveland, Ohio. 492

FOR SALE—Fifteen Old Guns for decorating a den. Rifles, muskets, and shotguns, all old and in pretty good shape. I will box the lot for $30, a bargain. J. G. Dillin, Media, Pa. 500

WANTED—Sharps-Borchardt, .45-70; Winchester '86 .45-70, one-half magazine or extra light-weight, both in good condition, also .45-70 reloading tools. H. D. Robbins, 1142 Hamilton Ave., Trenton, N. J. 503

FOR SALE OR TRADE—Model 97 Win. 12-gauge, 30-inch, full take-down, inside of barrel perfect, outside shows wear. WANT Winchester S. S. or S. & W. Revolver. J. W. Mackey, Fonda, Iowa. 502

WANTED—In gun crank condition, Springfield Sporter, 1903 Model with number over 1,000,000, star-gauged, targeted. Give detailed description and lowest price. F. M. Barker, 410 University Place, Grosse Pointe, Mich. 501

FOR SALE—Krag Sporter, 25-inch barrel, Springfield front and Lyman 34 rear sights, oil finished checked pistol grip and forearm stock. Inside of barrel perfect condition, price $25, or trade for "as issued" Springfield. WANT .45 Colt resizing and lubricating die for Ideal tool. Ed. Foster, Gowanda, N. Y., Route No. 1 491

FOR SALE—.22 Colt Auto Target Pistol, new condition, $24. S. & W. Russian Model 44 cal., 5-inch barrel, $17. Colt Single shot Deringer 41 rim-fire nickel finish, $8.50. S. & W. 22-32 H. E. Target Revolver, 6-inch barrel, new condition, $27.50. Collection of about 50 flint-lock and percussion pistols and revolers. Write for list. W. S. Lutz, 212 So. 42nd St., Philadelphia, Penna. 505

FOR SALE—Telescope, 3 13-16-inch objective newly finished polished and corrected, brass tube, rack and pinion movement, 20x and 75x with revolving head tripod, perfect illumination and definition. Price $135. Zeiss binocular, 2⅝-inch objectives, 15x, with tripod and automobile bracket. Fine illumination and definition. Price $95. No trades. Norman G. Hall, Box 305, Winona, Minn. 504

FOR SALE—S. & W. Hand Ejector, .32 Long, 4¼-inch barrel, nickel finish, engraved, pearl handles, checkered straps, square target sights, a very handsome gun, $30. S&W .22 long rifle single shot target pistol, pre-war single action, 6-inch barrel, nickel finish, checked trigger and straps. Patridge square target sights, $18.00. Kirkwood Bros. Inc., No. 23 Elm St., Boston, Mass. 497

FOR SALE—Colt Police Positive Target cal. 22, 6-inch barrel, Patridge sights, checkered wood grips, $25. Schmeisser Automatic 25 cal., hand carved Heiser holster, $12. 410 gauge, double, Crescent Gun Co., $20. Marlin take-down 1897, Lyman peep sight, 22 cal., Long Rifle, Long, Short, canvas case, $20. 20-power scope, $10. 33-power scope, $15. Brass mounted French achromatic lenses. H. F. Barrett, 90 West Broadway, N. Y. C. 506

FOR SALE—New Remington pump, 12-30 full, canvas case, $40. Remington Model 14, slide action, .25 cal., ivory bead, good used condition, $35. Colt .22 Target Revolver, 6-inch, inside good, outside perfect, spring shoulder holster, $21.50. I. C. S. course in Architecture and Bldg., 11 vols., new, unused, cost $55, sell $30 or trade for guns or binocular. All C. O. D., subject to examination. J. I. Davis, 4522 Forbes St., Pittsburgh, Pa. 498

FOR SALE—24-inch H. B. Springfield, complete, perfect, fired 300 times, $48. Nat. Match Springfield, crank condition, Lyman fore and aft, $38. Krag Sporter, refinished action, brand new 24-inch Neidner barrel, Lyman peep, ivory front, $32. S. S. .22 Winchester, used action, new barrel, B. S. A. rear sight, aperture front, $16. Spotting scope by Negretti & Zamboni, London, about 24x 3 feet extended, knurled adjusting screw, $12. Sole leather case for scope, $3. 3¼ x 4¼ Grafiex Camera, C1 Zeiss Tessar lens, three magazines, two plate backs, $150. Also developing tanks, retouching table, printing frames and other paraphernalia. 950 rounds Russian ammunition, perfect condition, $15. Russian rifle, new, $5 if sold with ammunition. New Gebhard mold casting 170-grain pointed super-accurate bullets, $3.50 Gebhard bullets, lead- antimony, $8 per 1,000. Ask for samples. Ernest Coler, 1209 Jarvis Ave., Chicago, Ill. 496

FOR SALE—Resizing dies, 45-70, .45 Colt, each $1.10. Neck resizing dies, Krag or Springfield, 85c. Ideal 8-ball molds No. 308333 gas check bullet about 200 grs., $3; No. 308274, 195 grs., $4.50. Collection of 70 ancient and modern cartridges, $3.25. Cal. 30 mold casting 5 round balls, perfect order, like new, suitable for any rifle, .308-in. diam., $3.25 each. Cal. 45 mold casting 4 round balls, perfect order, like new, suitable for 45-70 rifles (.457-in. diam.) or 44 cap and ball revolvers, $4.50 each. Spare cylinders, cal. 36 Colt, Mod. 1851, never used, like new, each, $1.25. Spare barrels cal. 36 Rem. Mod. 1858, bores fine, $1.10 each. Ideal shell chamfering reamers, Krag or Springfield, $1.10 each. Cartridge belts, 45-70, 50c; Krag, $1.50. 30-06, $1. B. K. Wingate, R-2, Reading, Pa.510

FOR SALE—One 14½ lb. Winchester S. S. .22 L. R. target rifle, auto extractor, 30-in. octagon bbl., double set triggers nickeled hinged palm rest new Win. rear peep and globe front sight, both adjustable. One black walnut stock with left-hand cheek piece, one fancy curly walnut stock with right-hand cheek piece with nickeled Schuetzen buttplate. One rustless steel cleaning rod with brass swivel handle. One new Win. '5A scope with mounts on rifle. This is a very accurate rifle. One cherry finished brass trimmed case 18 x 8 x 7 inches with compartments for carrying patches, cartridges, palm rest, oil and grease cans and special spring holder for scope. A complete shooter's outfit for $110. Dona Ballou, Jewett City, Con. 517

FOR SALE—B. S. A. Match rifle, super-accurate, telescope blocks, pistol grip on lever, specially smooth action, extra low B. S. A. rear sight to clear cleaning rod. Price, $35. S. & W. single action, 10-in. target pistol, new 22 L. R. Olympic barrel attached, new Patridge sights, hand made oversize walnut grips with thumb rest. Condition like new. Complete with leather holster. Price, $35. J. M. Hilborn, 2710 Sedgwick Ave., New York City. 511

FOR SALE ONLY—One S. & W. 10-inch improved model target pistol, Patridge sights, perfected pull, new Olympic model. Barrel A-1 gun-crank condition, outside perfect, only shot few times, complete with a hand-made, hand-tooled holster. First money order for $25 gets it. Warren Buch, Main St., Fleetwood, Pa. 499

FOR SALE—.38 S. & W. Target Special, 6-in. bbl. with Heiser laced safety holster and 4½-in. hand carved belt holding 60 cartridges. Mold and parts for Bond tool. All in new condition. Original cost $63. For a quick sale send $40 money order to Albert Haiges, 108 Carey Ave., Wilkes Barre, Pa. 515

FOR SALE OR TRADE—Kodaks, Grafiex cameras, lenses, binoculars at lowest prices, new and slightly used. We take your camera or high grade firearms in trade. National Camera Exchange, 7th & Marquette Sts., Minneapolis, Minn. 514

FOR SALE—One 3 bbl. gun, 16-ga., 30-30, splendidly finished. Made by Schmidt & Heberman, Suhl, Germany. First check for $185 takes it, or will ship C. O. D. with privilege of examination on receipt of $10. Anthony Fiala, 25 Warren St., New York City. 519

WILL EXCHANGE the following two firearms for something different, what have you to offer? New Remington 380 auto pistol, Union 12-gauge full ribbed, full choke repeater, a heavy long range gun. Martin J. Carlson, Barry, Minn. 508

FOR SALE OR TRADE—New Buffalo Newton rifle, 30-'06. Just received from factory. Sell or trade for 1895 Winchester, 30-'06. H. W. McCormick, 800 Garfield St., Mt. Vernon, Wash. 512

FOR SALE OR TRADE—One long Kentucky rifle in fair condition. One Colt .30 cal. cartridge revolver, like new. Ed. C. Hill, 5580-A Etzel Ave., St. Louis, Mo. 516

WANTED—Short Mauser action, new or A1 condition. Also Ballard or Stevens No. 44½ action for 22 cal., like condition. C. H. Johnson, R. F. D. No. 4, Goldsboro, N. C. 507

WANTED—Krag carbine or Lee-Enfield, as issued, or Colt 45 single action or model 1909. Description and price in letter. Arthur W. Hecker, 523 Oakwood St., Pittsburgh, Pa. 509

FOR SALE—Accurate well stocked Krag Sporter, Lyman gold bead front and .34 rear sights. With accessories, $30. New 7.62 Russian, $6. H. U. Goltry, Amber, Okla. 518

WANTED—Cal. 38-30 cartridges or empty brass shells. Cal. 44 Everlasting brass shells. Chas. L. Hepp, Boonville, Ind. 513

WANTED—Ballard action, engraved, double set triggers, give full description and price. T. P. Tower, Cummington, Mass. 537

FOR SALE—Band L No. 7 Protar lens and 5 x 7 Special camera. C. E. Lingernfelter, 1100 S. Home Ave., Oak Park, Ill. 522

FOR SALE—Winchester Model 1895, 30-'06 cal. Solid frame rifle, inside perfect, outside slightly worn, price $30. J. C. Balnden, 1192-A Broad St., Newark, N. J. 523

FOR SALE—Savage .250, lever, pistol grip, takedown. Barrel and finish perfect. Lyman sights. $35. G. A. Bruce, 429 Church St., New Britain, Conn. 526

WANTED—Complete year of *American Rifleman* 1923 and earlier. FOR SALE—Parker D. H. E. shotgun, 12-gauge in good condition, $85. also several Civil War carbines. Geo. Shuburgh, 603 Pine Ave., Long Beach, Cal. 535

FOR SALE—Caliber .45 Model 1909, U. S. Army, double action revolver, condition very good, barrel O. K., $15. Colt Officers Model, .38 Special, practically new, 6-inch barrel, latest model, $30. A. L., care *American Rifleman*.

FOR SALE—Fox, sterling worth, 12-28, new condition, $35. Krag carbine, good shape, $8. Steens Single, 12-ga. mod. choke fine shape, $6. First money orders take them. E. A. Crooks, Arkport. N. Y. 531

FOR SALE—Model 1903 star-gauged Springfield in gun crank condition inside and out. Shot about one hundred times. Complete with sling, field cleaning kit and barracks cleaning rod, $25. E. P. Knowles, 36 Sanhican Drive, Trenton, N. J. 528

FOR SALE—London per. Colt .36 cal. 7½-in. engraved cinder, fine condition, $12.50. Same as above with original belt and holster in good shape, $9.50. New model Remington per. .44 8-in bbl., shows original bluing, fine shape, $10.50. .31 cal. Colt per. 5-in. bbl., fine condition, $10. Dana E. Fidler, 730 S. 4th St., Lafayette, Ind. 520

FOR SALE—One 24-in. heavy barrel, .30-cal. Springfield rifle, No. 48 rear and hooded front sight, palm rest, set triggers, high speed firing pin, stock as made for International Team 1922. This gun fired but little and is in new condition. First money order for $60 takes it. W. R. Mitchell, 1743 Hall Place, Indianapolis, Indiana. 530

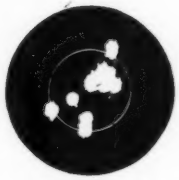
FOR SALE—Remington Model 24 .22 L. R. autoloading, perfect inside and out, $18.50. Winchester 25-20 carbine, barrel excellent, outside fine, $16.50. .45 Colt S. A. 7½ practically new, barrel perfect with 40 shells, $20. .31 cal. round lead balls 40c per hundred, .44 cal. 75c per hundred. Will ship above arms for inspection to responsible parties. Wm. H. Foster, Route E., Lafayette, Ind. 521

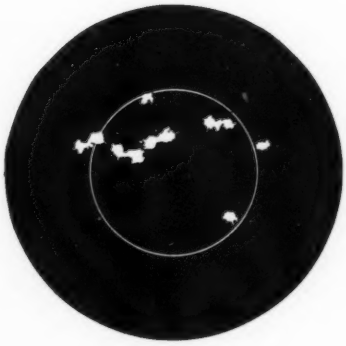
FOR SALE—One Colt .45 S. A. 4¾-in. bbl., good condition, $10. One Stevens .330 12 x 32, slightly used, $22. One .36 cal 40-in. bbl., set triggers M. L. rifle, fine condition, $8. One .44 smooth bore 41-in. bbl., good, $5. One hand-made .38 rifle single shot 33-in. heavy bbl. set triggers, good $8. One 12 x 32 M. L. double shotgun, good, $10. WANT—30-30 tool and mold and 20 x 28 double Ithaca or Fox. Wm. K. Knepp, Nook, Pa. 525

FOR SALE—A few super-accurate Free Target Pistols stamped "Venus," just received from abroad direct from a gunsmith. Single action, .22 L. R., weight 2¾ lbs., bbl., 10-in. long, 8 grooves, sight radius 14-in., rear sight and set triggers adjustable, specially shaped grip with turn rest, etc., well balanced besides a fine piece of art. The kind for the International Matches. Price, $40 C. O. D., subject two weeks examination. F. Rupprich, 3 Kissel St., North Bergen, N. J. 529

FOR SALE—New Ottway 20-X spotting scope $9. Also a large 25-X for $20. New Ottway 6 x 30 binoculars, $25. New .22 L. R. Peterson-Winchester, $40. Also new Peterson-Ballard, $60. New Remington 30 cal. auto complete with Lyman sights and loading tools, $45. Also a 32 cal. at $40. New B. S. A. No. 12 match rifle, $32.50. New 6-X Fecker scope with No. 2 mounts, $30. New 20-ga. Marlin, $30. Springfield Sporter perfect with No. 48 sight, $65. A new Sporter stock only, $25. Colt 45 new Service, $10. A very good 1903 Springfield, $25. A perfect 38 O. M. Colt, $27.50. .22 S. & W. 10-in. target pistol, $20. Stevens 22 Lord model like new in very fine case, $25. Very fancy Winchester 30 Army Schuetzen style rifle, $65. This gun is new and a beauty. Will consider a trade for perfect guns. Fred. N. Anderson, Suffern, N. Y. 524

And more than half were V's





His rifle cracked thirty times—ten at 50 yards, ten at 100 yards, ten at 200 yards.

When scores were announced, Mr. Jerry M. Hilborn of the Roosevelt Club of New York found himself possessed of a world's record. At 50 yards, ten shots had pierced the ten ring, at 100 yards nine had done the same and the 200 yard target registered ten all in.

His score was 249. All he could have made was 250. *And more than half his shots dug into the V ring*—that charmed circle not every bullet enters.

This fine shooting occurred at the recent Sea Girt matches during the Eastern Small Bore Team match. And the cartridge used was the US .22 N. R. A.

The record of the US .22 N. R. A. shows that about the only place it feels at home is in the bull's-eye. Of unfailing uniformity, constant accuracy and as dependable at 50 feet as at 200 yards, the performance of this wonder cartridge has made it world-famous.

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If you will specify US .22 N. R. A. when drawing .22 calibre ammunition from the N. R. A., you will get it. Thousands of dealers sell it. If yours doesn't, write us.

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"Carey's Chickens" Carry On!

The great German offensive on the Somme began on March 21st, 1918. The 6th Engineers, U. S. A., were forced to retreat with the 5th British Army.

On March 27th, General Carey succeeded in gathering together all of the slowly retiring forces and made a stand. In the front line of Carey's improvised battalions, which later came to be known as "Carey's Chickens", was the 6th. They fought bravely with whatever weapons they could grasp —picks and shovels as well as rifles—in the desperate struggle to consolidate the line, and at Warfusee-Abancourt they held an infantry sub-sector for a week while in command of their own Colonel—Colonel Hodges.

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